

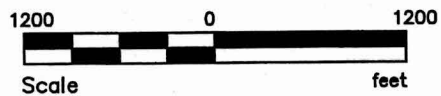
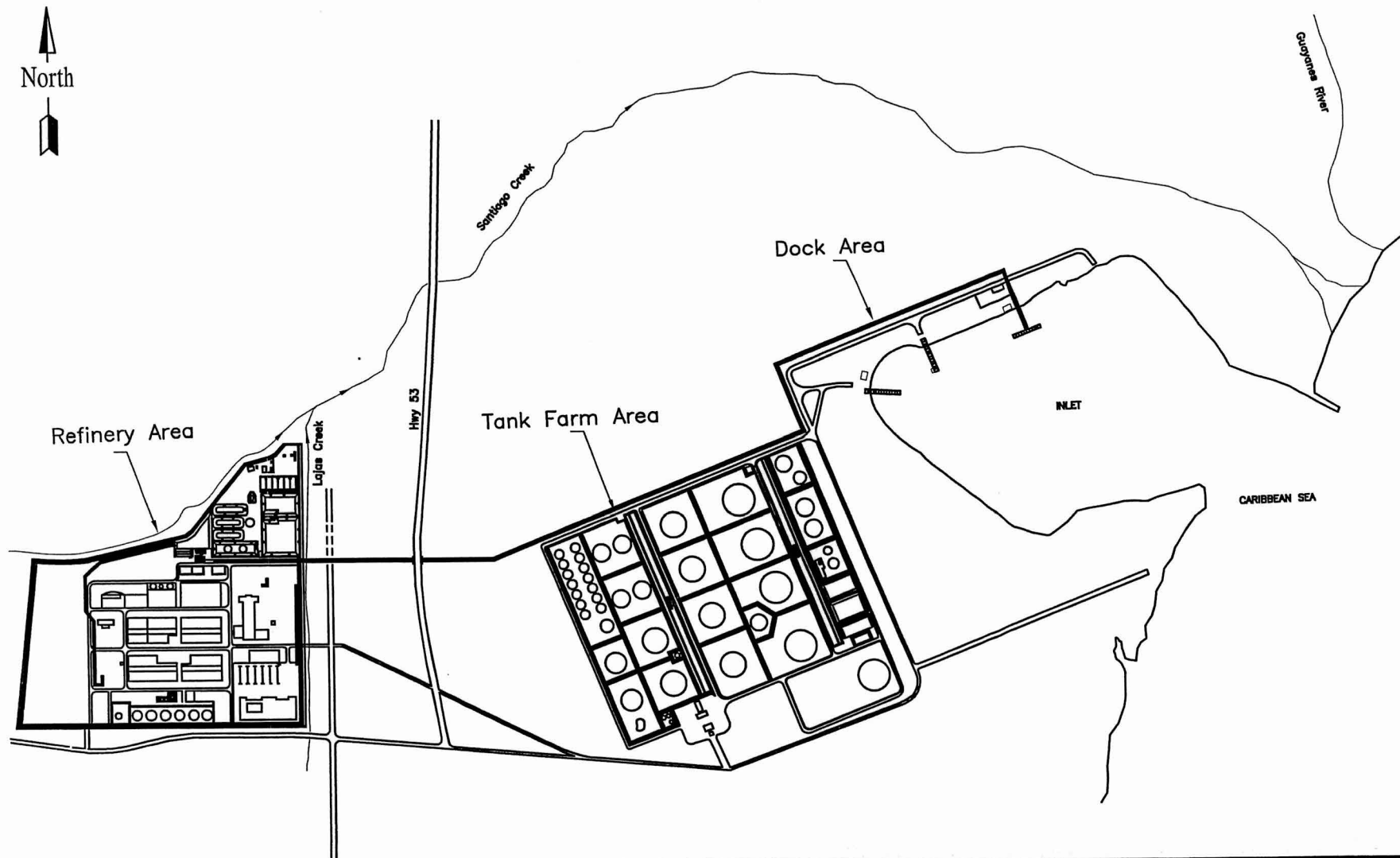
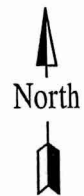
Scale	Date
Indicated	March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-1

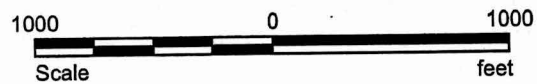
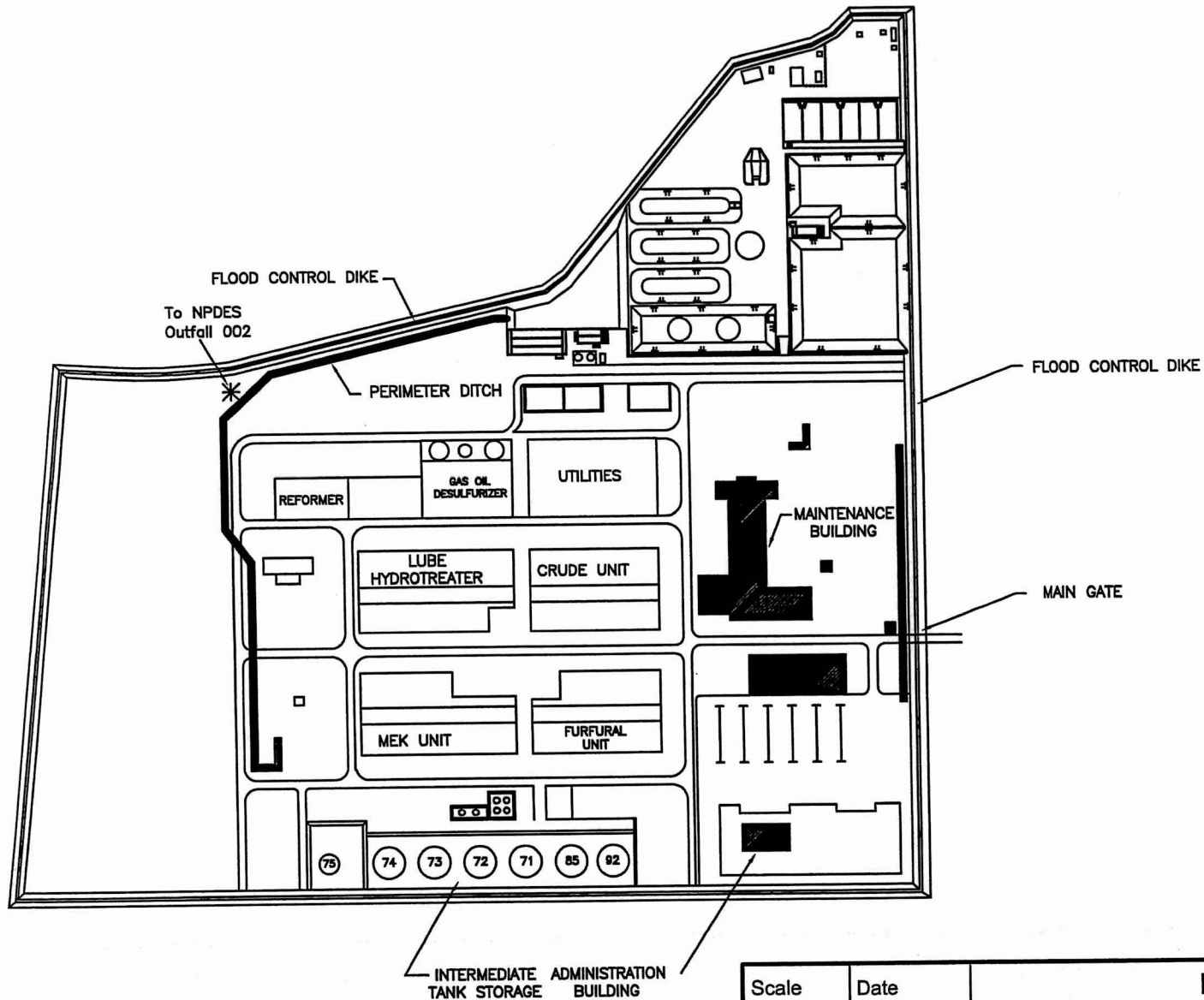
SCYI Facility Location Map

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Scale	Date
1/14400	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK HATO REY, PUERTO RICO	

Figure 2-2
Facility Site Map
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

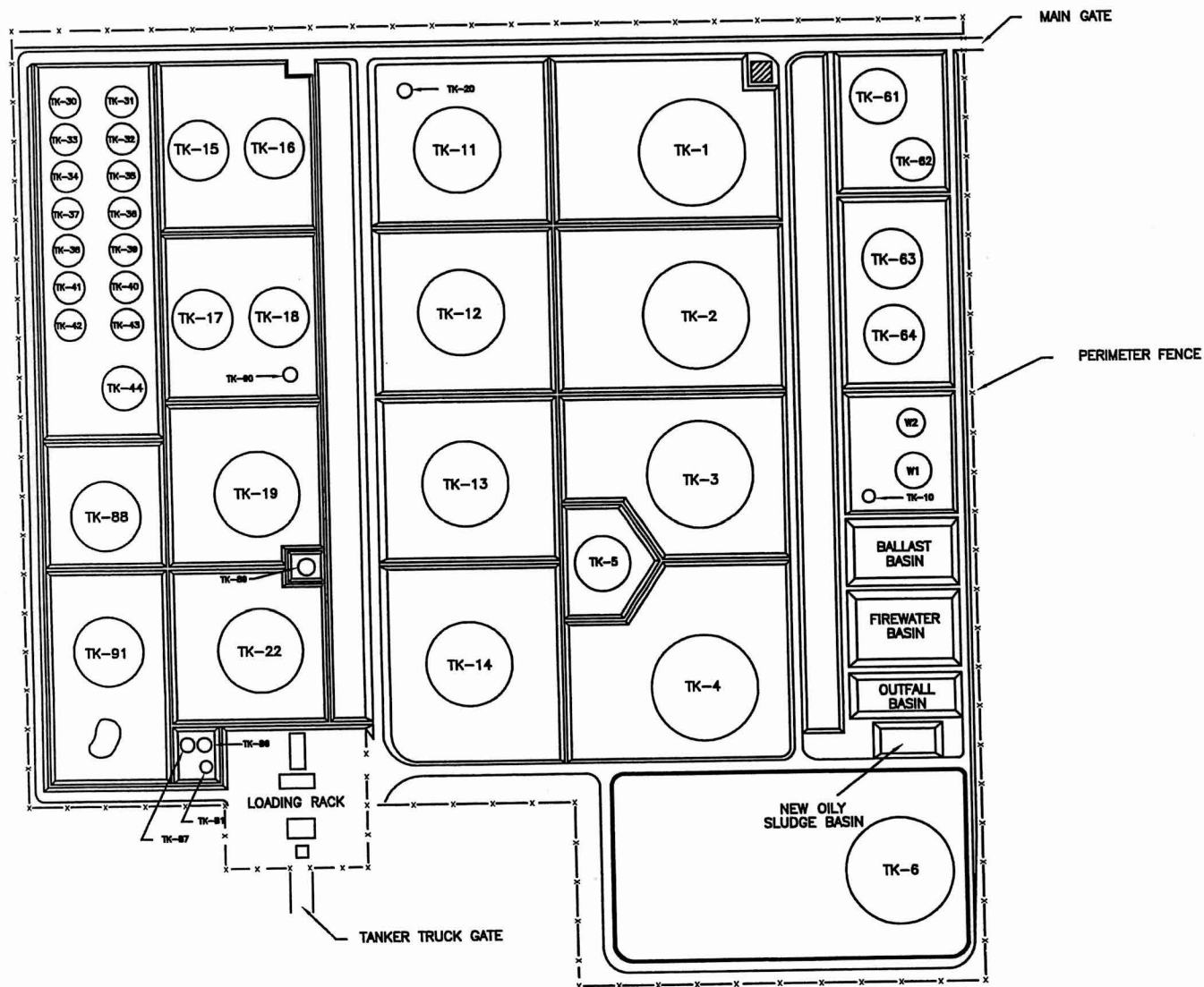


Scale	Date
1" = 800'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC.	
WHITE PLAINS, NEW YORK	
SAN JUAN, PUERTO RICO	

Figure 2-3

Refinery Area Site Plan

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



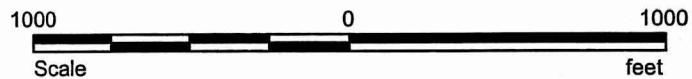
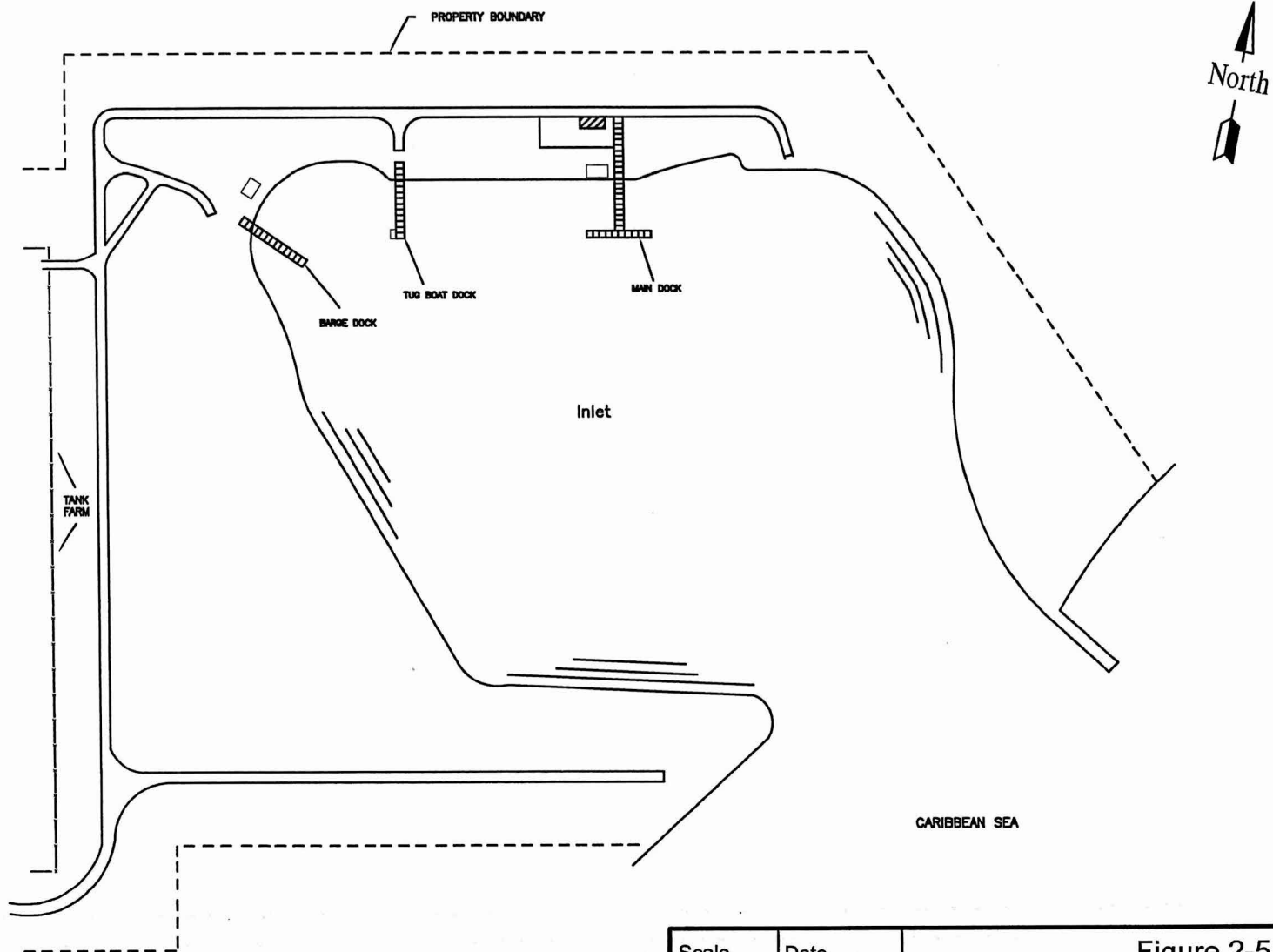
500 0 500
Scale feet

Scale	Date
1" = 400'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-4

Tank Farm Site Plan

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

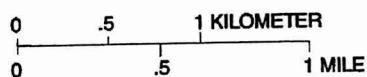
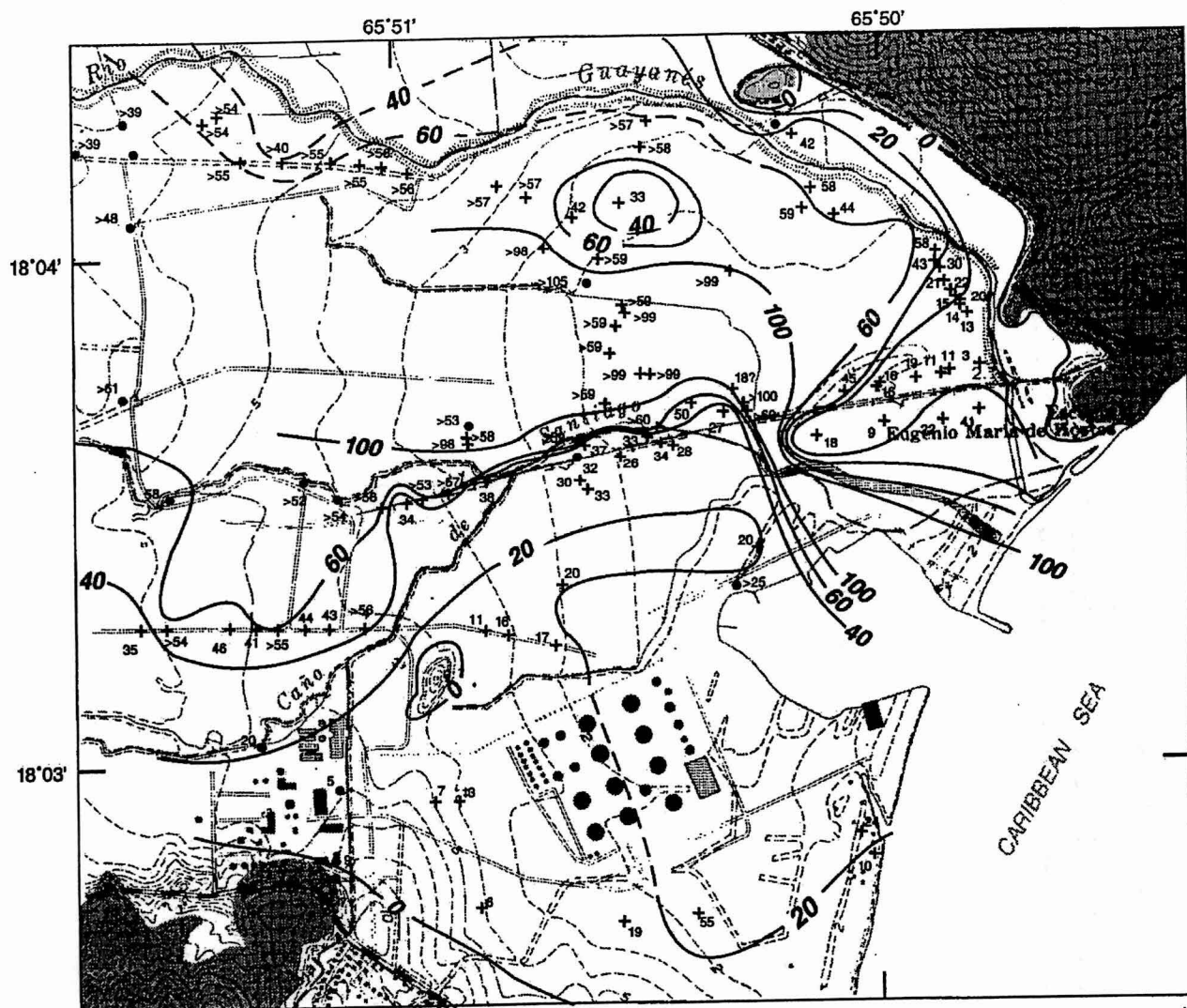


Scale	Date
1" = 600'	March 2005
ANDERSON • MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	





Figure 2-5

Dock Area Site Map

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



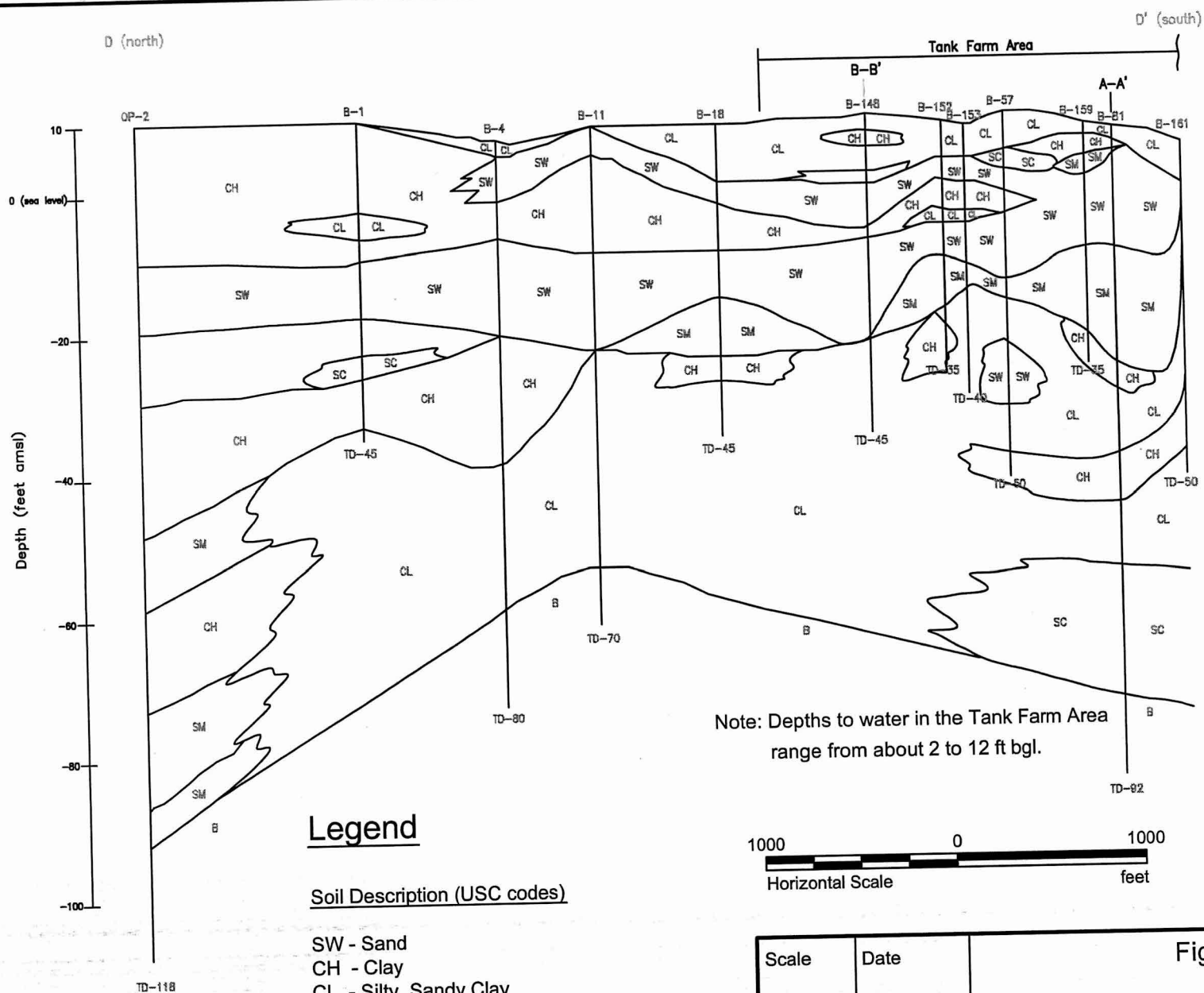
EXPLANATION

-  IGNEOUS ROCKS
-  **20** — — LINE OF EQUAL DEPTH TO BEDROCK IN METERS. Datum is mean sea level. Dashed where approximate
-  **9** WELL NUMBER IS DEPTH TO BEDROCK IN METERS BELOW MEAN SEA LEVEL
-  **+ 19** GEOPHYSICAL SITE. Number is depth to bedrock in meters below mean sea level

Scale	Date
Indicated	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-6
Bedrock Elevation Map
(from USGS, 1996a)

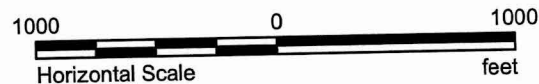
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Legend

Soil Description (USC codes)

- SW - Sand
- CH - Clay
- CL - Silty, Sandy Clay
- SC - Clayey Sand
- SM - Silty Sand/Sandy Silt
- B - Weathered Diorite Bedrock
- TD - Total Boring Depth (feet below ground level)

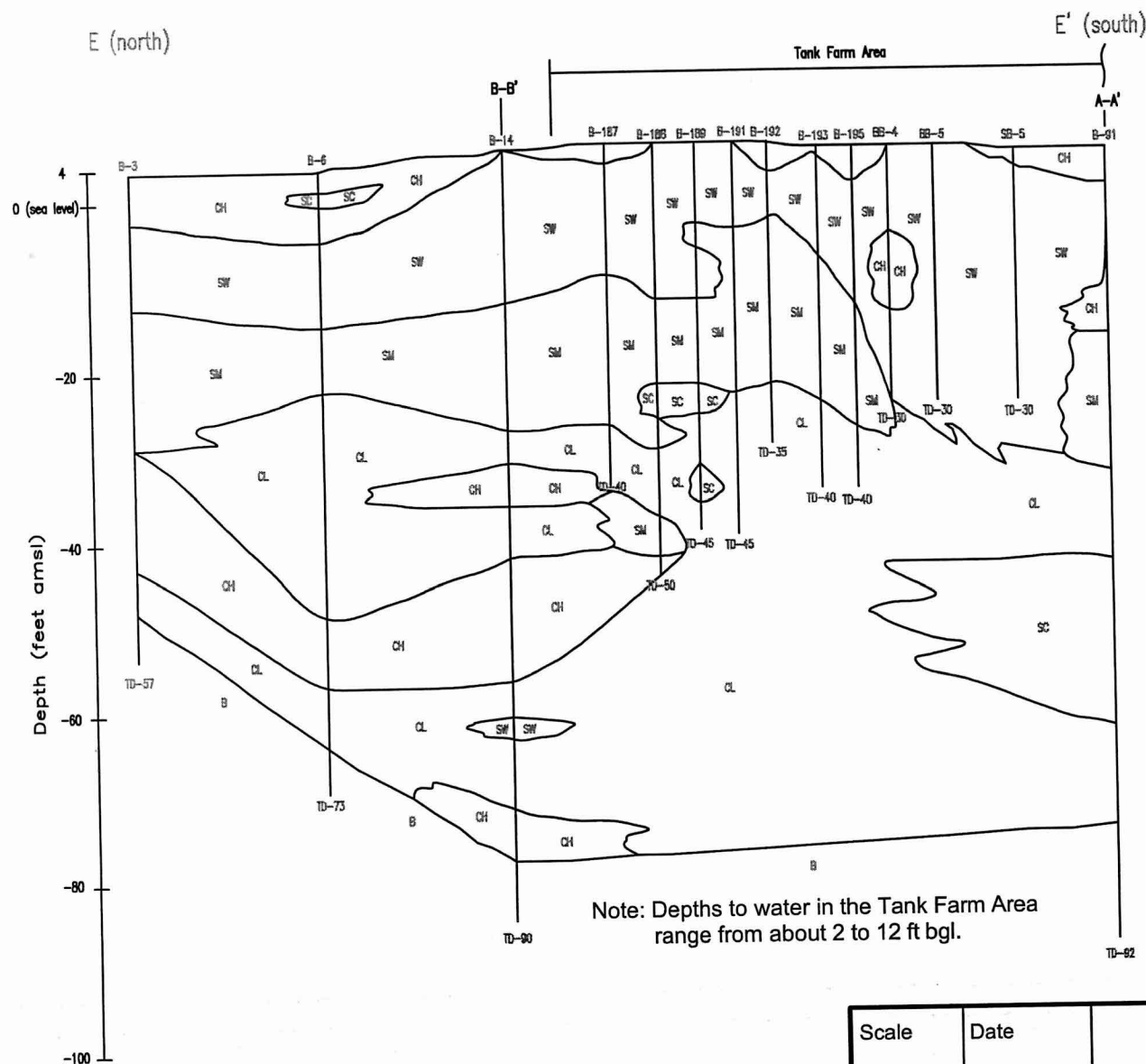


Scale	Date
Indicated	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-10

Geologic Cross - Section D-D'

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Legend

Soil Description (USC codes)

- SW - Sand
- CH - Clay
- CL - Silty, Sandy Clay
- SC - Clayey Sand
- SM - Silty Sand/Sandy Silt
- B - Weathered Diorite Bedrock
- TD - Total Boring Depth (feet below ground level)

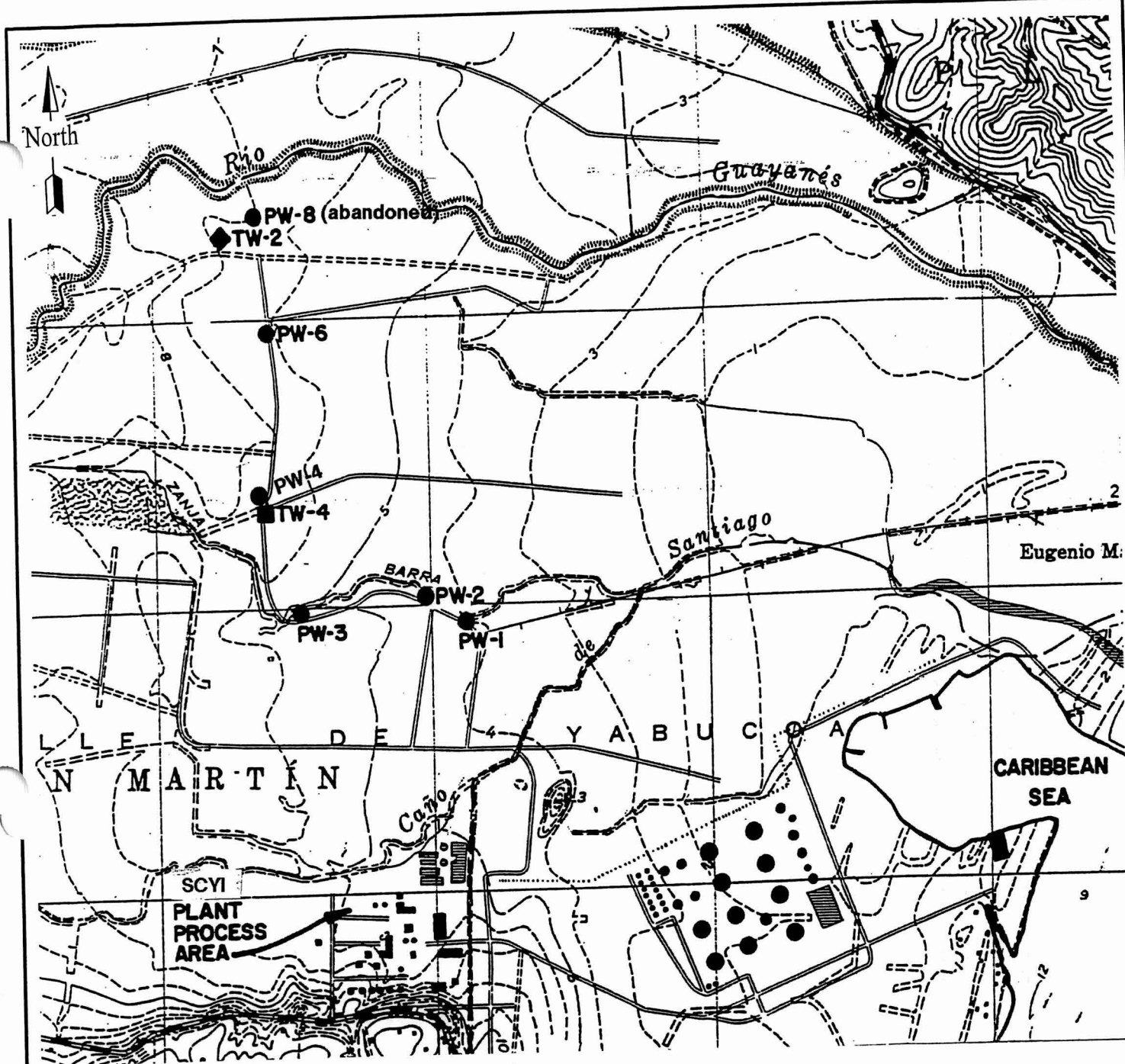
Scale	Date
Indicated	March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-11

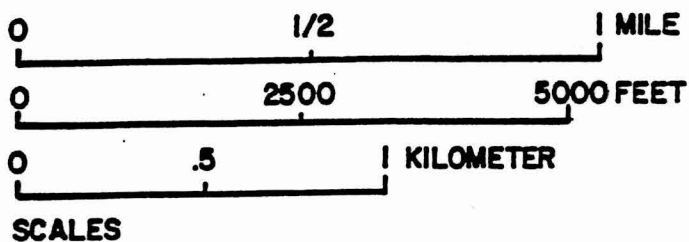
Geologic Cross - Section E-E'

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



LEGEND

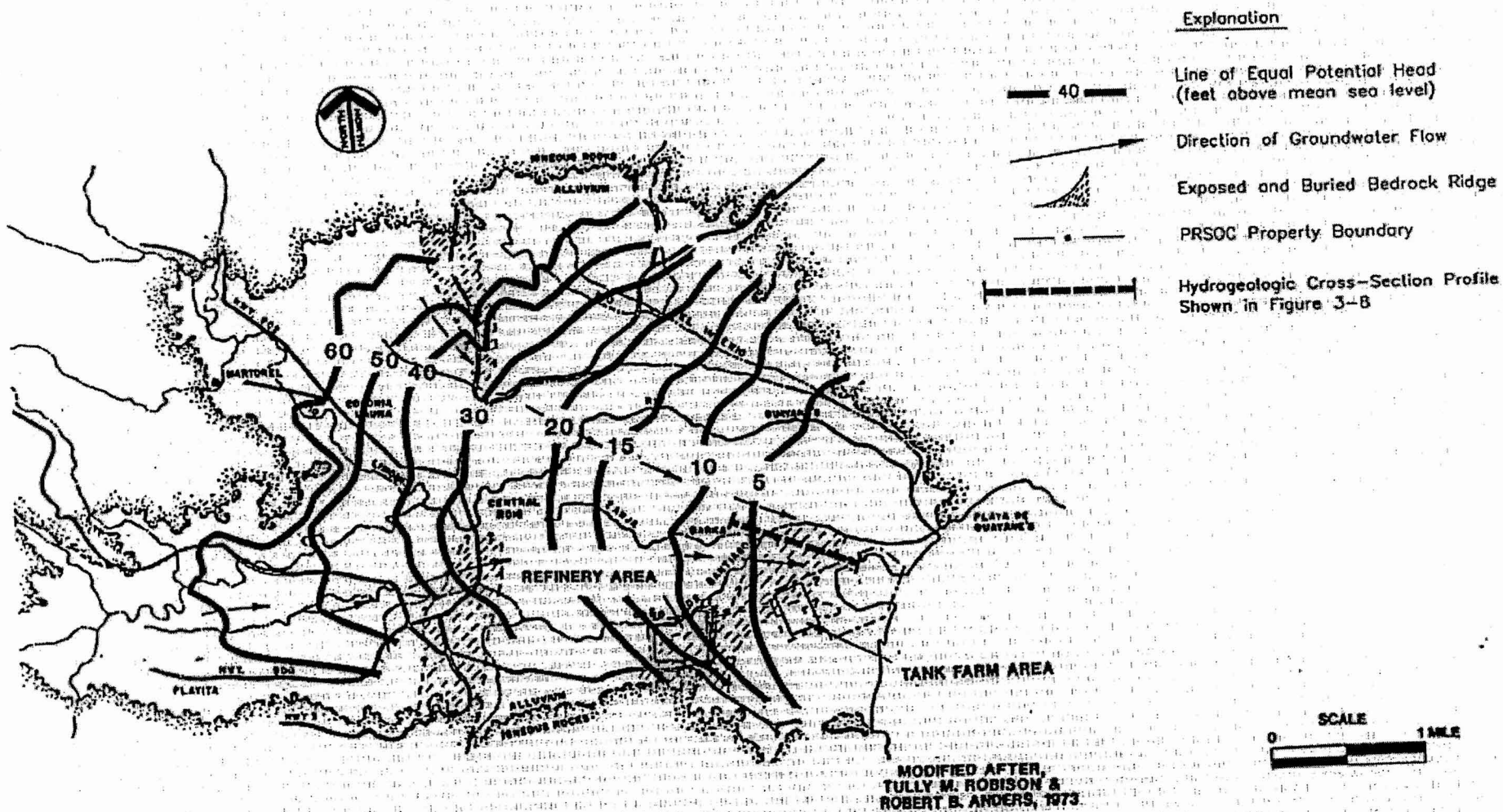
- PW-6 SCYI PRODUCTION WELL
- TW-4 SCYI TEST WELL
- ◆ TW-2 USGS OBSERVATION WELL



Scale	Date
	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-12
Location of Facility Production Wells

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

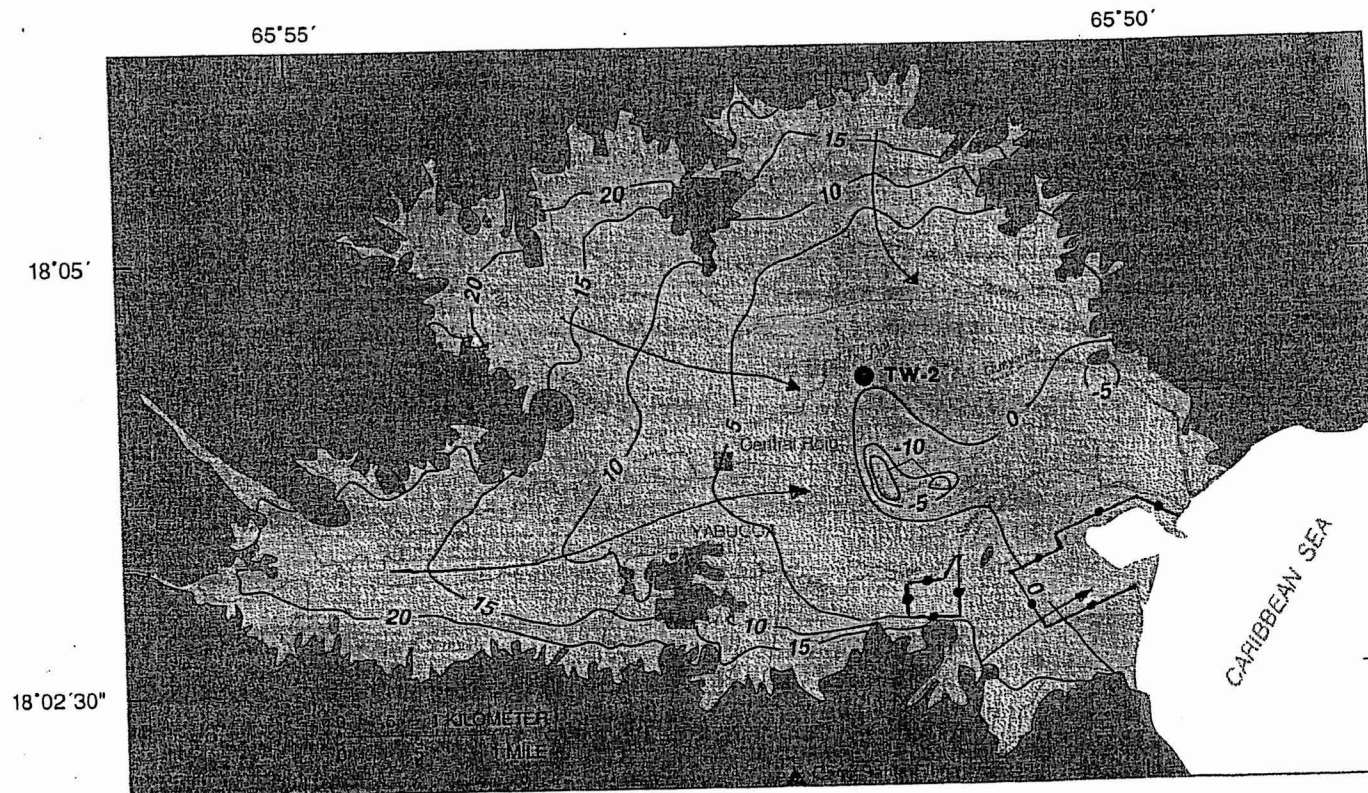


Scale	Date
Indicated	March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-13
Regional Groundwater Elevation
and Flow Direction Map

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



EXPLANATION

- ALLUVIUM
- IGNEOUS ROCKS

— 15 — POTENTIOMETRIC CONTOUR—Shows altitude at which water level would have stood in tightly cased wells. Contour interval is variable. Contours are in feet above mean sea level.

— — — PRSOC Property Boundary

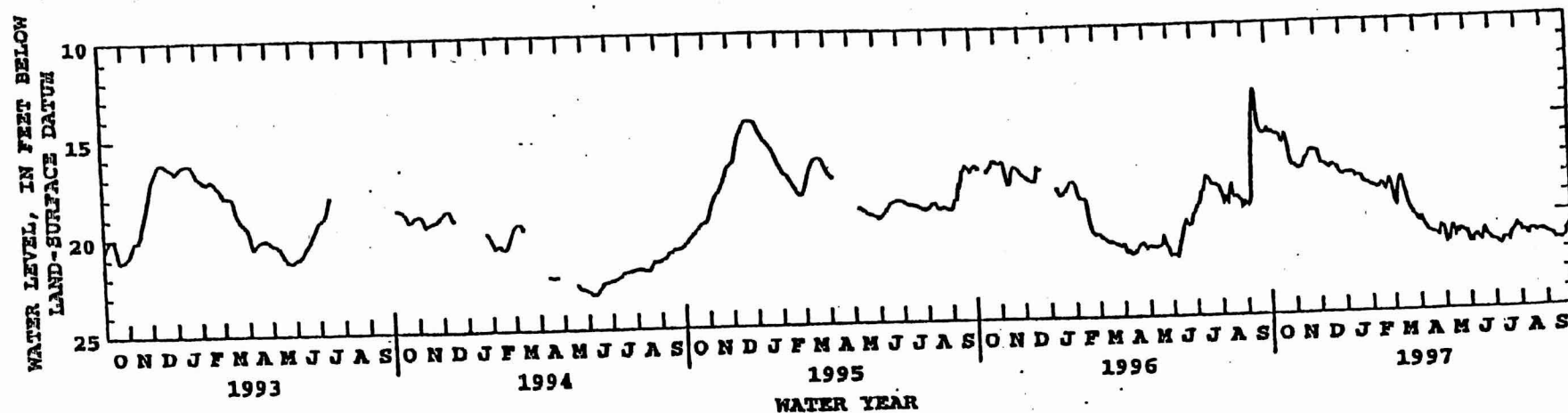
→ Direction of Groundwater Flow

Modified from USGS, 1996, Geochemical Properties and Saline-Water Intrusion in the Valle De Yabucoa Alluvial Aquifer, Southeastern Puerto Rico, USGS Water-Resources Investigations Report 96-4188.

Scale	Date
Indicated	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-14
Regional Groundwater Elevation
and Flow Direction Map (1990)

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Notes:

1. The location of this well is shown in Figure 3-7B.
2. The USGS identifies this well as USGS TW-2 or Yabucoa 7.
3. Water levels are shown in feet below land surface. The land surface elevation is about 25 ft amsl, based on the USGS topographic map.
4. Total depth of well is 181 ft. The well casing is perforated from 56-81 ft, 102-123 ft, and 144-181 ft.

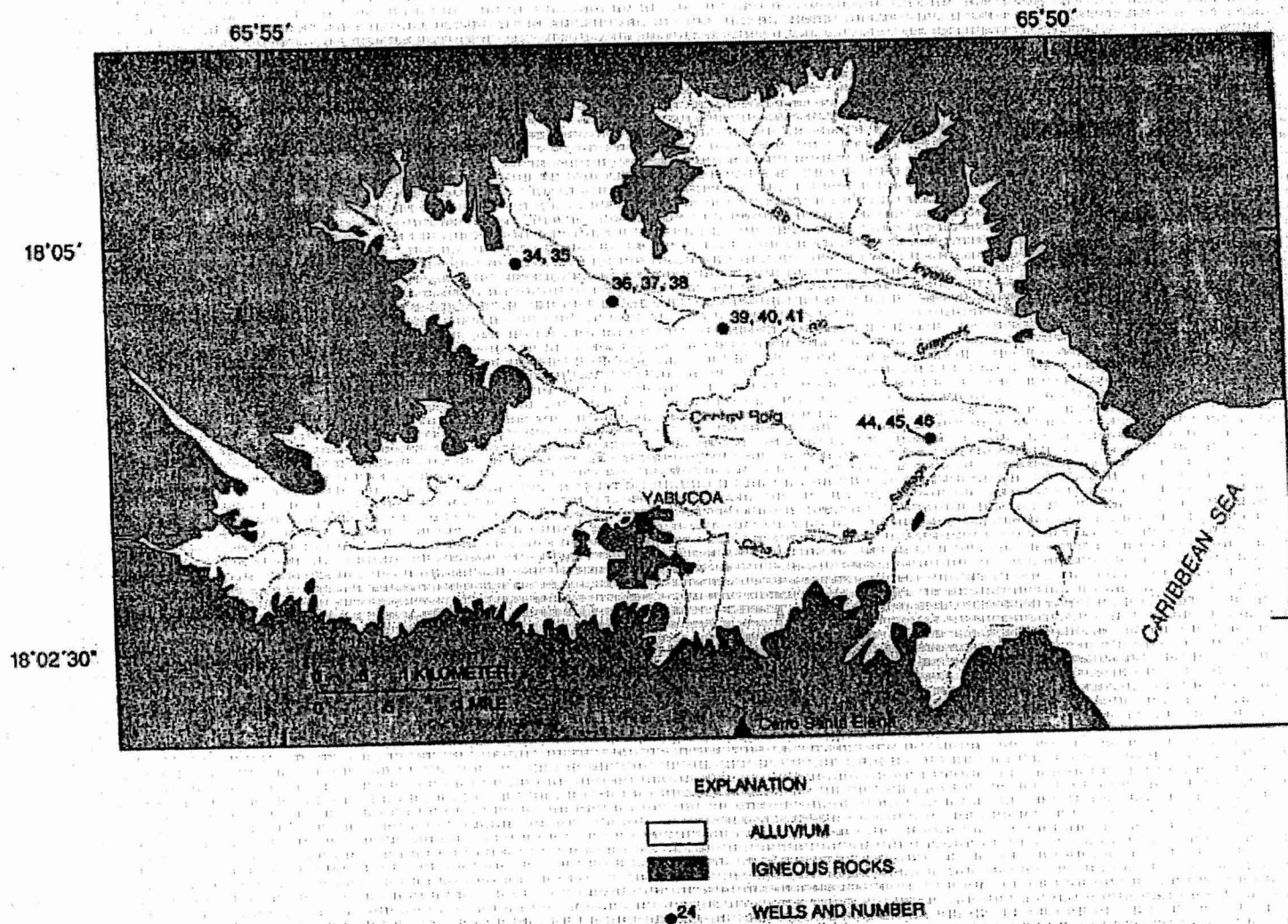
Adapted from USGS, 1998, Water Resources Data - Puerto Rico and the U.S. Virgin Islands, Water Year 1997, USGS Water-Data Report PR-97-1.

Scale	Date
None	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-15

Groundwater Levels at Well USGS TW-2

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Scale

None

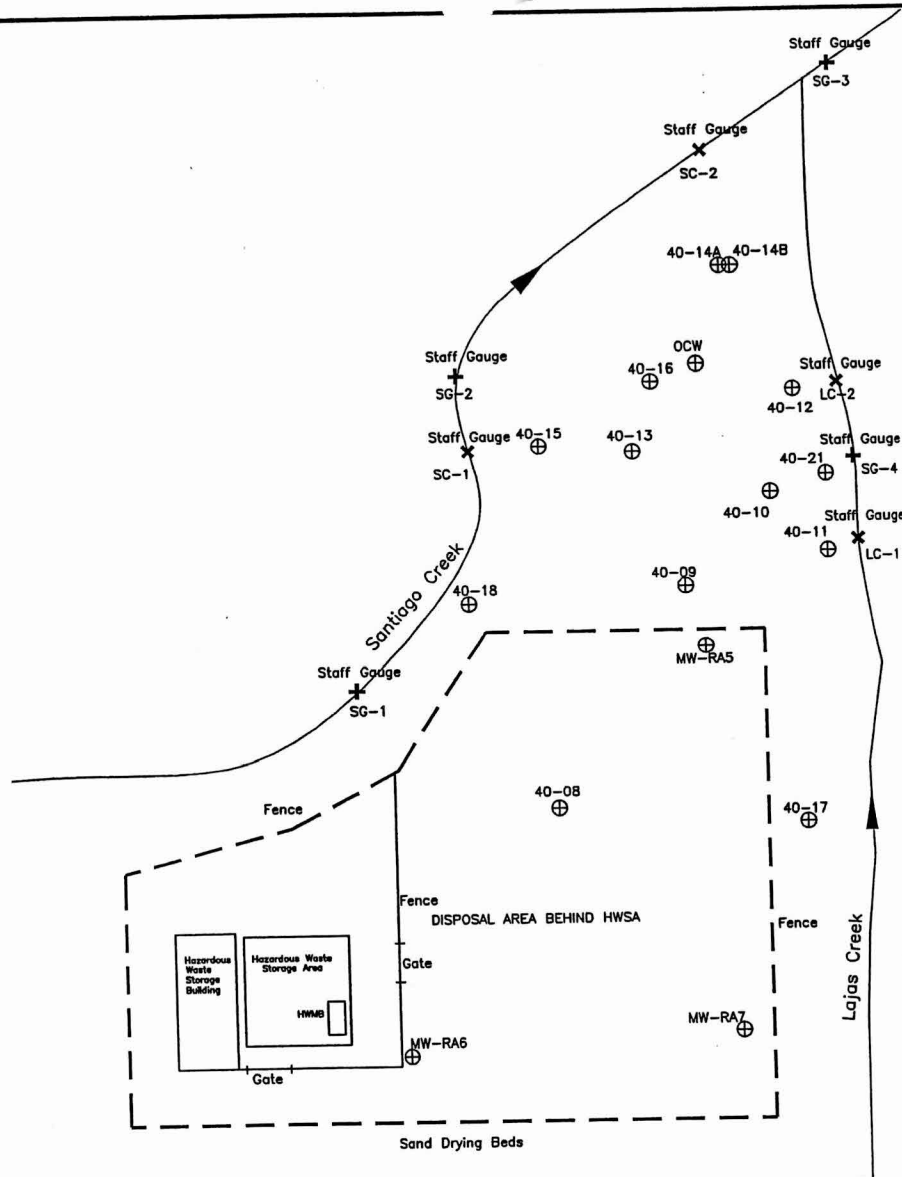
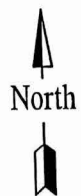
Date

March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-16

**Location of USGS Nested Groundwater
Monitoring Wells**
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

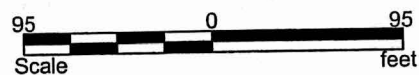


LEGEND

- × Stream Staff Gauge, May 2003-Jul 2004
- + Stream Staff Gauge, Sep 1996-Jan 1997
- ⊕ Groundwater Monitoring Well
- ⊗ Existing Well

NOTE:

OCW is the Old Construction Well



Scale

1"=95'

Date

March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-19

Groundwater and Creek Monitoring Locations at the Northeast Refinery Area

Shell Chemical Yabucoa, Inc
Yabucoa, Puerto Rico

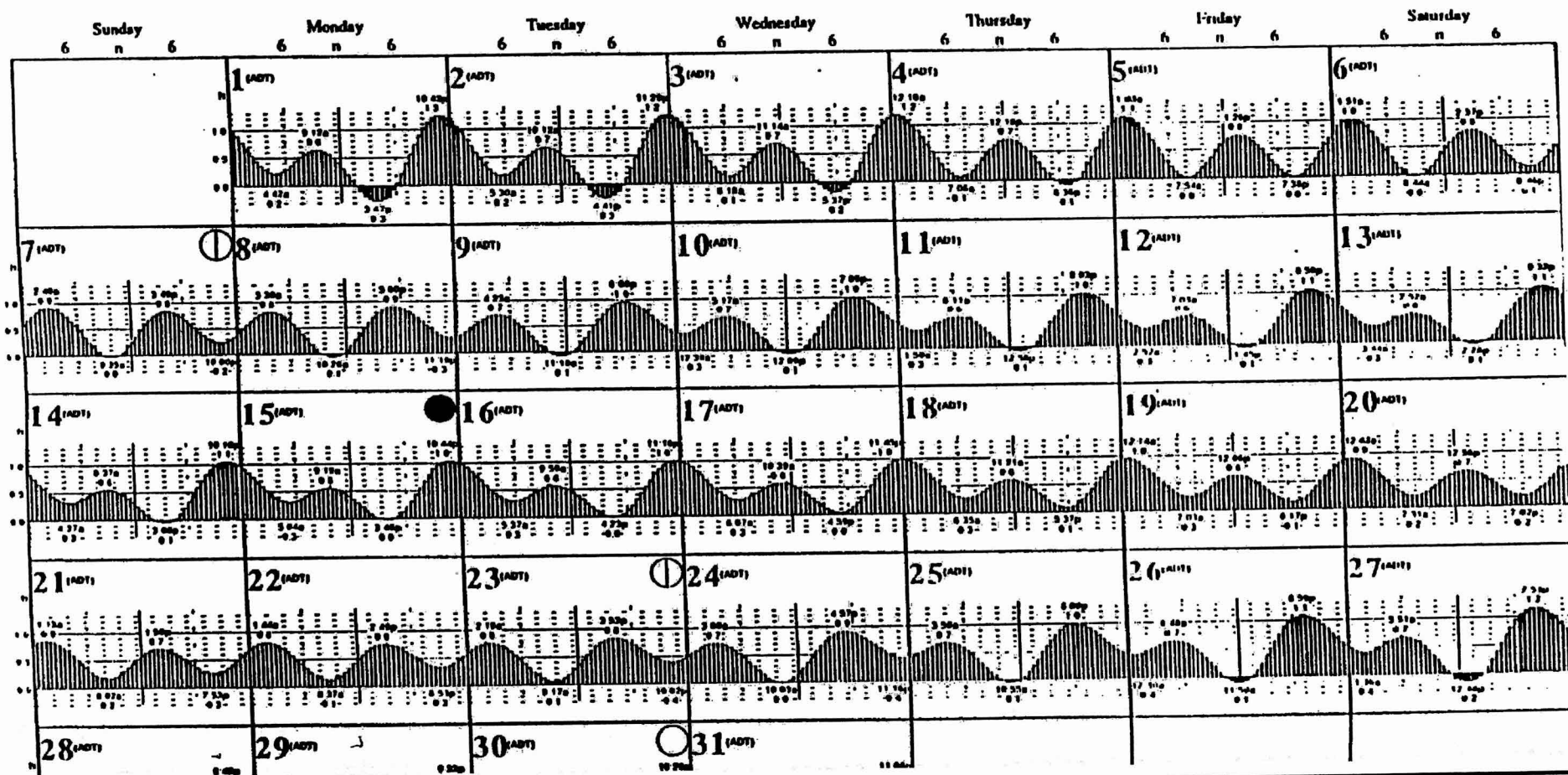
Tides - Roosevelt Roads

18° 14.0' N 65° 37.0' W

July 1996

Monthly High & Low
High July 1, 10.42p 1.3 ft
Low July 1, 3:47p 0.3 ft

Average Tides
Mean Range: -- ft
Diurnal Range: 1.0 ft
Mean Tide: 0.5 ft



Scale

None

Date

March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.

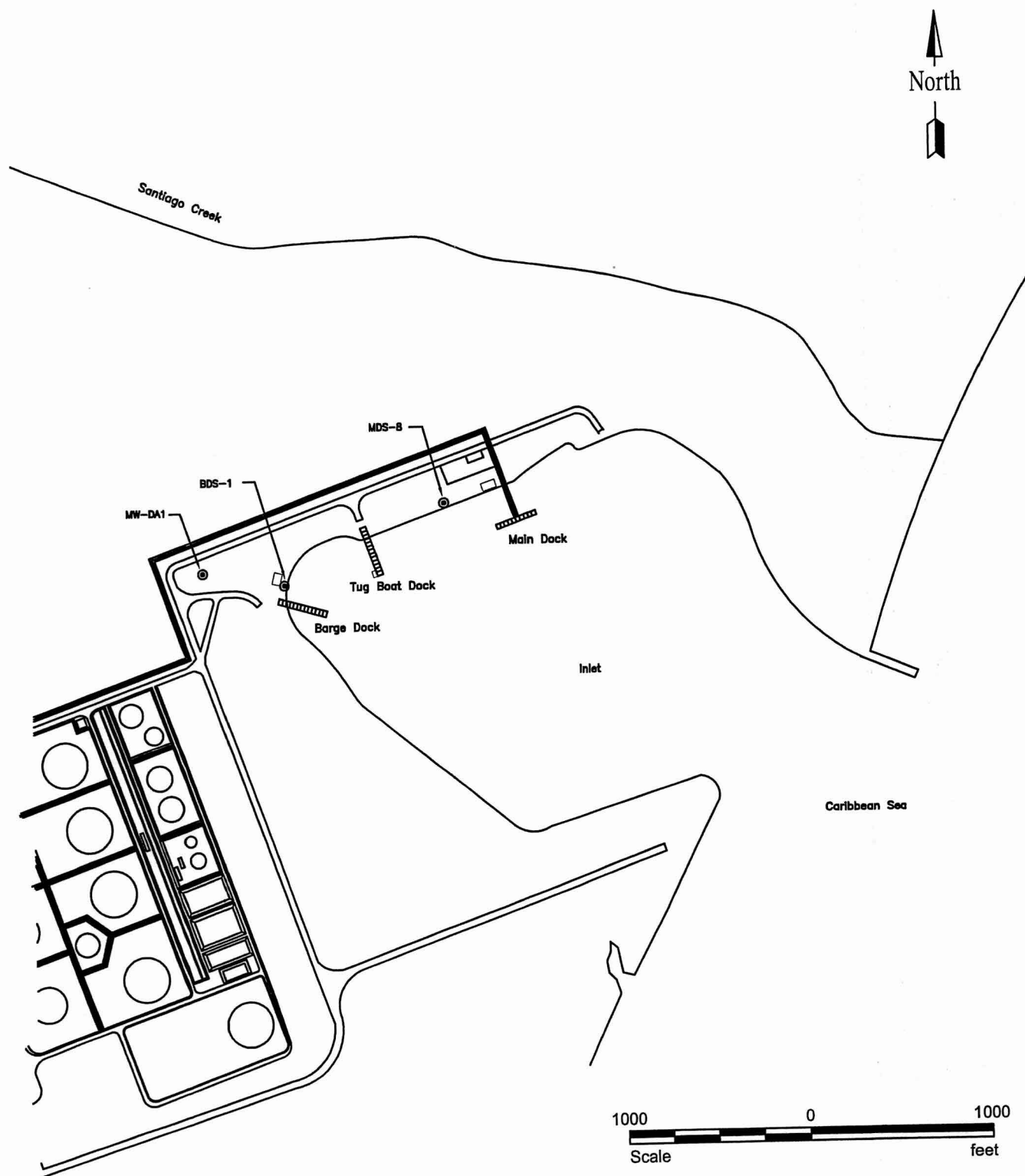
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 2-20

Tides - Roosevelt Roads (July 1996)

18° 14.0' N 65° 37.0' W

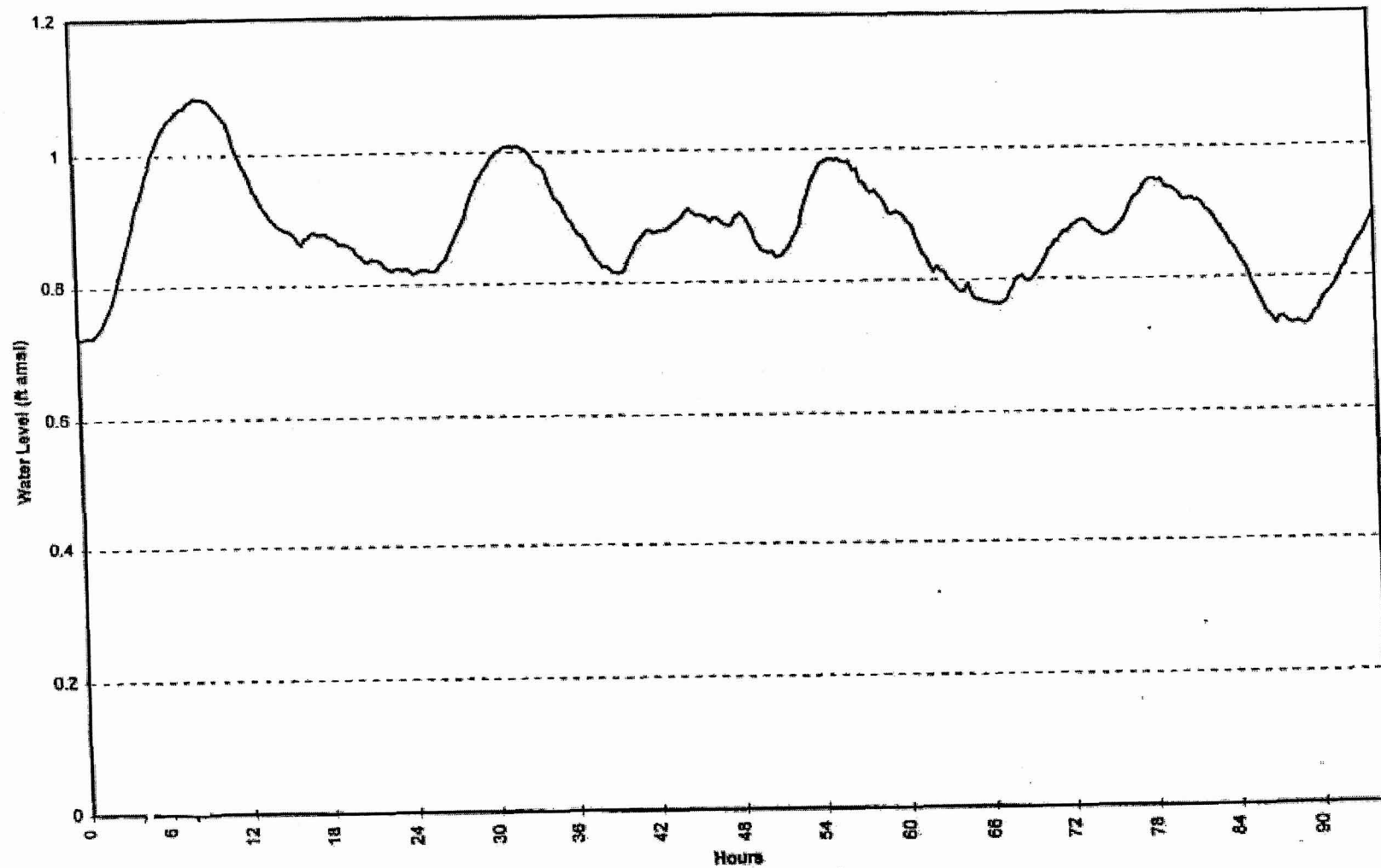
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Scale	Date
1" = 800'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-21
Location of Monitoring Wells for Tidal
Groundwater Level Measurements

Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

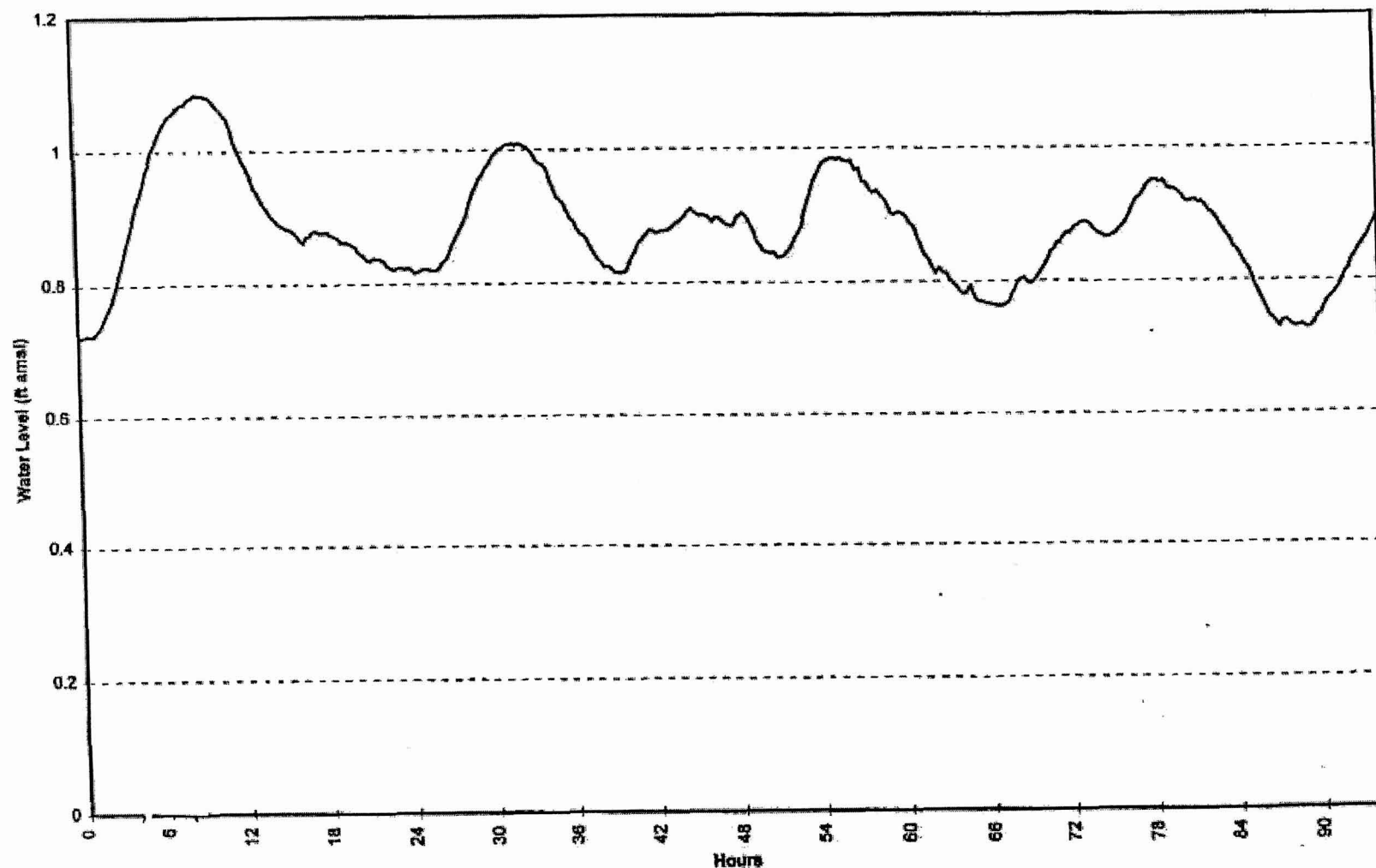


Scale	Date
None	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-22

Tidal Fluctuations at Well MDS-8

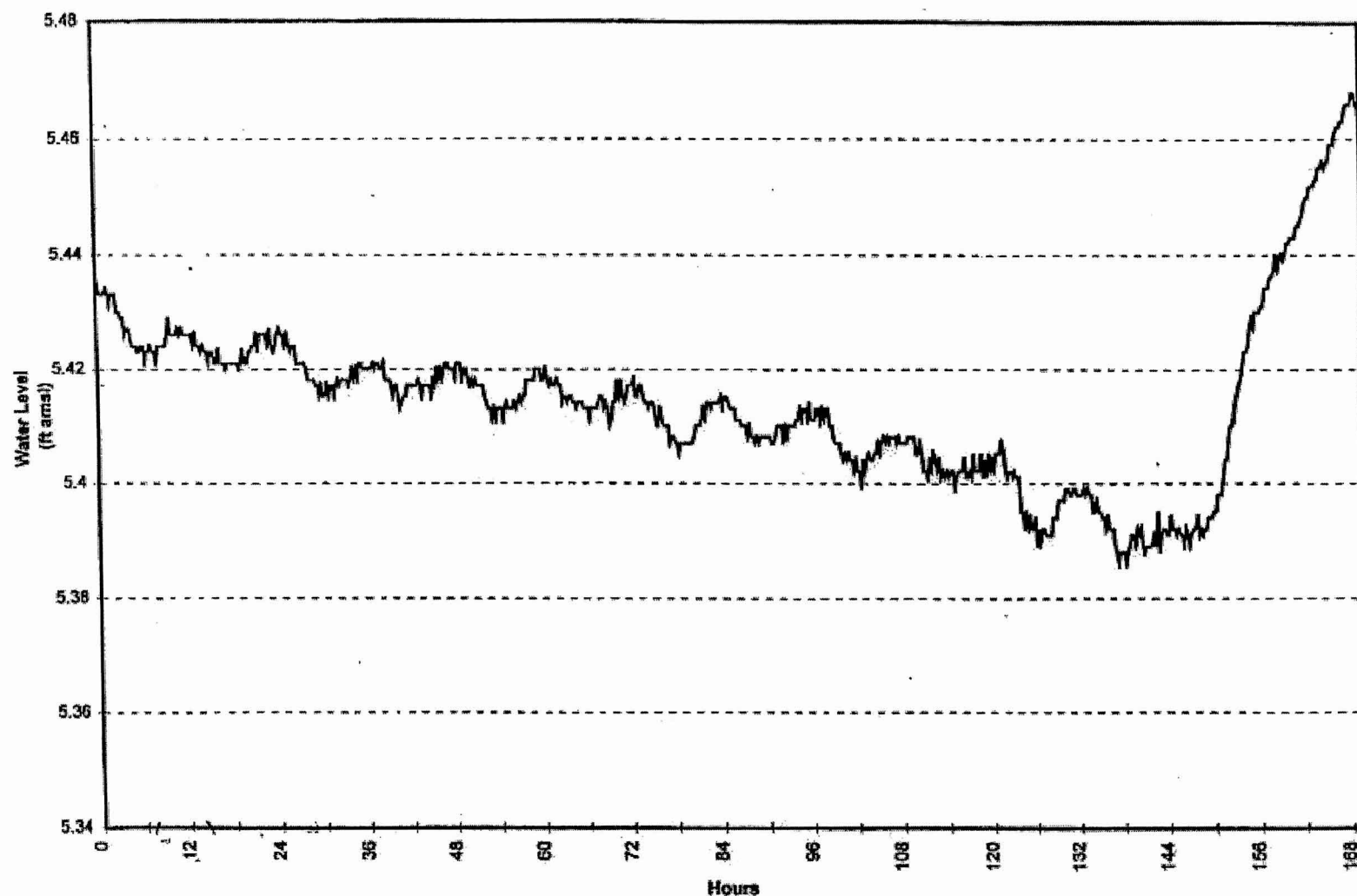
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Scale	Date
None	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-23
Tidal Fluctuation at Well BDS-1
 (from 1635 hrs on 7/18/96 to 1450 hrs on 7/22/96)

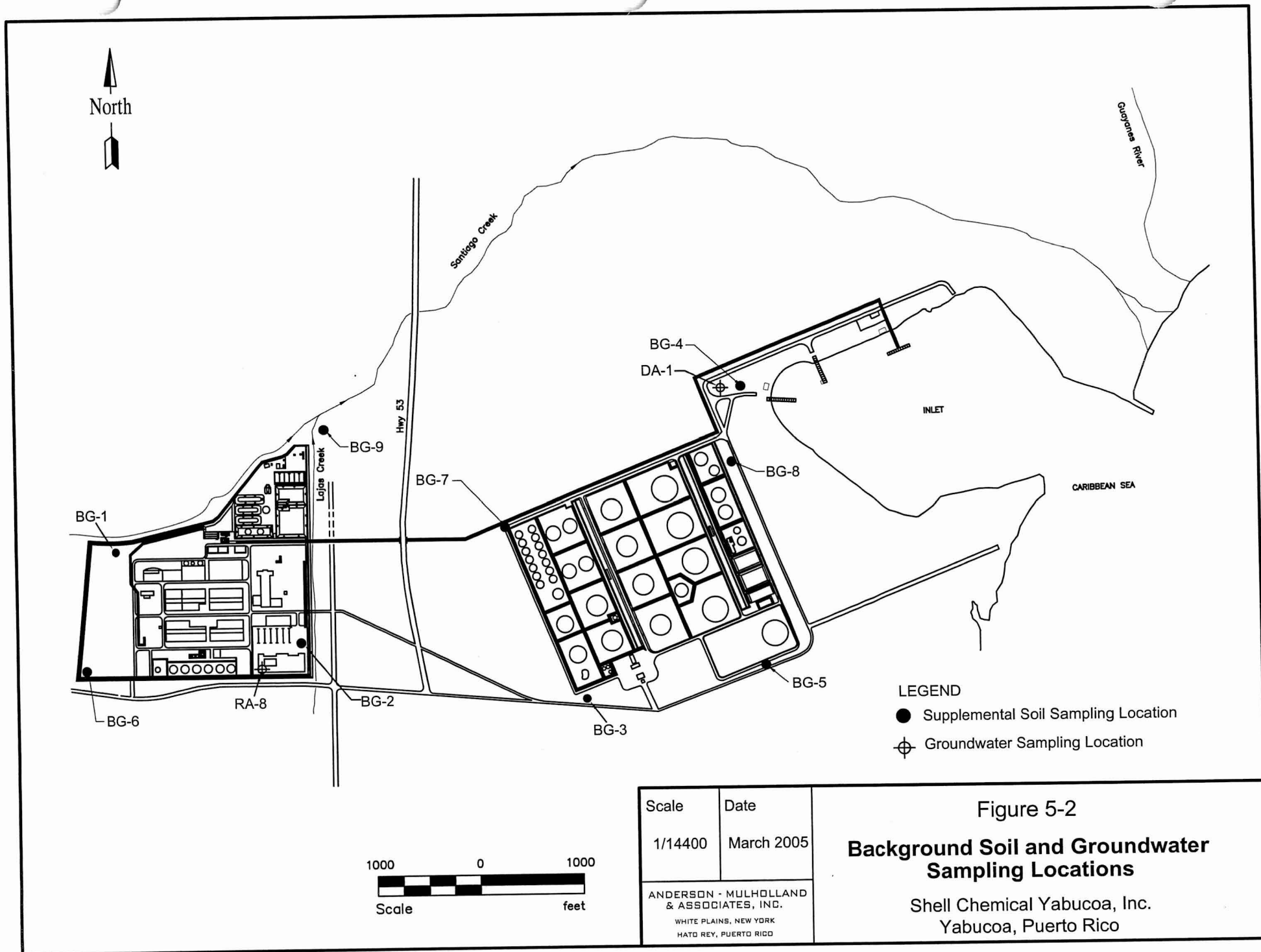
Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

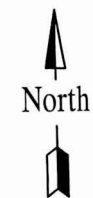


Scale	Date
None	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 2-24
Tidal Fluctuation at Well DA-1
 (from 1540 hrs on 7/22/96 to 1710 hrs on 7/29/96)

Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico





SLUDGE DIGESTOR

NORTH AERATION BASIN

SOUTH AERATION BASIN

FINAL RETENTION BASIN

CLARIFIER

FRB-2

FRB-1

FRB - 2 ANALYTE (ug/L)	Aug-96	Jan-97	Apr-03
VOCs	NE	---	---
BNAs	NE	---	---
Antimony (dissolved)	54.7 B	45.8 U	2.3 U
Antimony (total)	---	---	2.3 U
Other Metals (dissolved)	NE	---	---

FRB - 1 ANALYTE (ug/L)	Aug-96
VOCs	NE
BNAs	NE
Metals (dissolved)	NE

NOTES

Antimony Maximum Contaminant Level is 6 ug/l

Detections above groundwater screening levels are highlighted and bolded

U - not detected at the concentration shown

B - concentration is between the instrument detection limit (IDL) and contract required detection limit (CRDL).

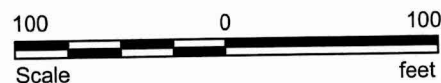
'---' - not sampled

NE - no exceedance

LEGEND

⊕ Monitoring Well

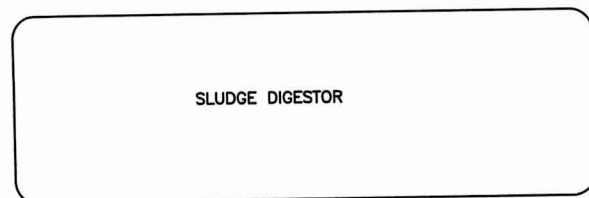
Groundwater Flow Direction



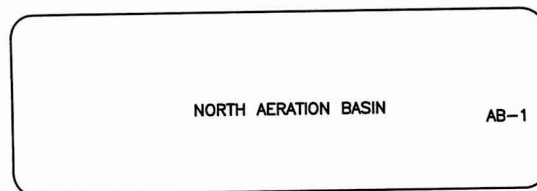
Scale	Date
1/1080	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK HATO REY, PUERTO RICO	

Figure 5-3
**Final Retention Basin
Groundwater Sampling Results**

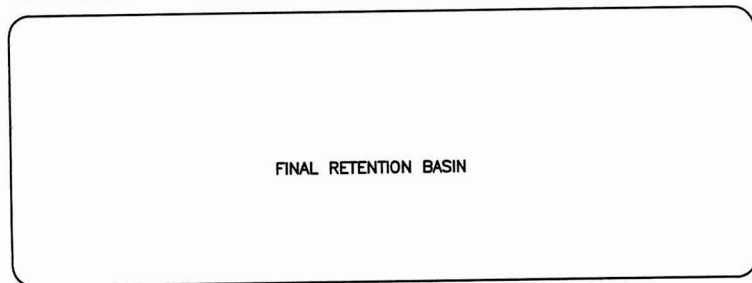
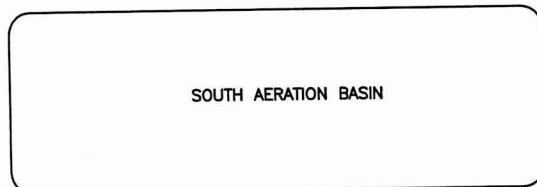
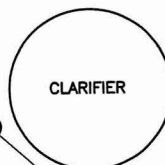
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



AB-2
⊕



AB-1
⊕



AB - 2 ANALYTE (ug/L)	Aug-96	Jan-97	Jan-97 dup	Apr-03
VOCs	NE	---	---	---
BNAs	NE	---	---	---
Antimony (dissolved)	50.5 B	45.8 U	45.8 U	2.3 U
Antimony (total)	---	---	---	2.3 U
Other Metals (dissolved)	NE	---	---	---

Groundwater Flow Direction

AB - 1 ANALYTE (ug/L)	Aug-96	Aug-96 dup	Jan-97	Jan-97 dup	Apr-03
VOCs	NE	NE	---	---	---
BNAs	NE	NE	---	---	---
Lead (dissolved)	15.9 J	2.7 UJ	2.2 UJ	2.2 U	1.9 U
Lead (total)	---	---	---	---	1.9 U
Arsenic (dissolved)	12.3 J	11.4 J	---	---	---
Arsenic (total)	---	---	---	---	---
Other Metals (dissolved)	NE	NE	---	---	---

NOTES

Antimony - Maximum Contaminant Level is 6 ug/l

Lead - Action level is 15 ug/l

Detections above groundwater screening levels are highlighted and bolded

U - not detected at the concentration shown

J - estimated value

dup - duplicate

'---' - not sampled

NE - no exceedance

LEGEND

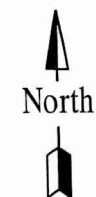
⊕ Monitoring Well



Scale	Date
1/1080	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK HATO REY, PUERTO RICO	

Figure 5-4 North and South Aeration Basin Groundwater Sampling Results

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



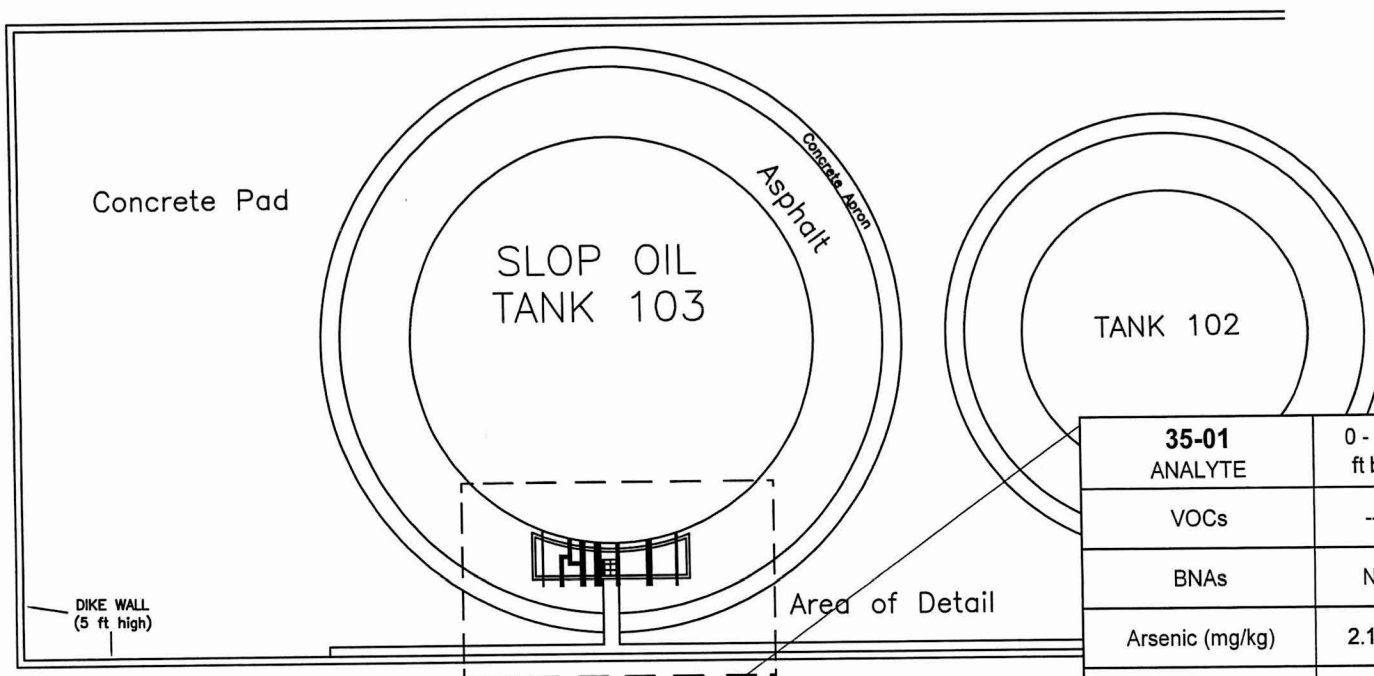
NOTES

'---' - not sampled

NE - no exceedance

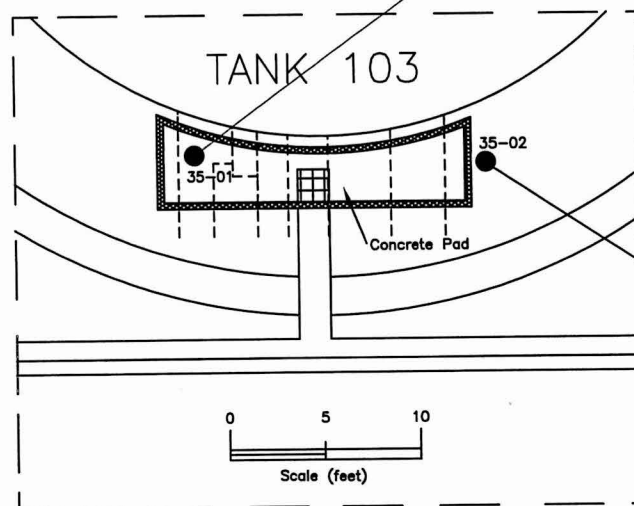
LEGEND

● Soil sampling locations - full analysis



35-01 ANALYTE	0 - 0.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl
VOCs	---	NE	NE	NE
BNAs	NE	---	NE	NE
Arsenic (mg/kg)	2.1 BJ	---	NE	NE
Other Metals	NE	---	NE	NE

Detail Showing
sampling locations



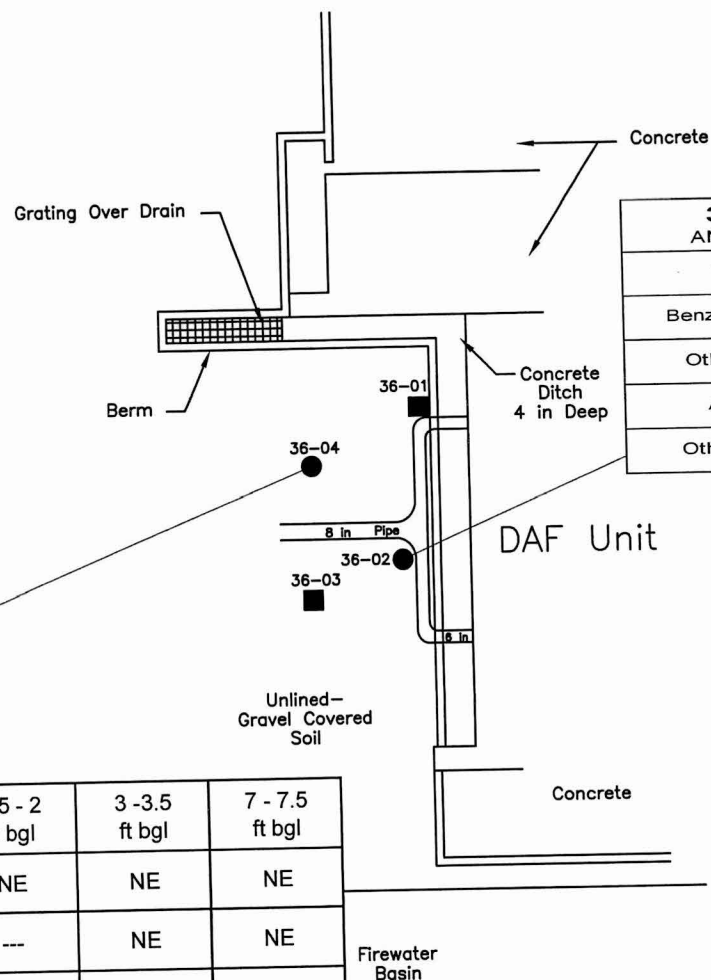
35-02 ANALYTE	0 - 0.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl
VOCs	---	NE	NE	NE
BNAs	NE	NE	NE	NE
Metals	NE	NE	NE	NE



Scale	Date
1" = 20'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-5
**Slop Oil Tank 103
Soil Sampling Results**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



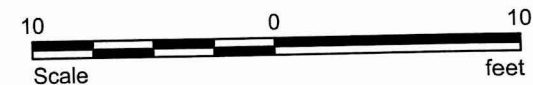
36-02 ANALYTE	1 - 1.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl
VOCs	---	NE	NE	NE
Benzo(a)pyrene	NE	---	400 J	NE
Other BNAs	NE	---	NE	NE
Arsenic	NE	---	1.8 B	NE
Other Metals	NE	---	NE	NE

NOTES

'---' - not sampled
NE - no exceedance

LEGEND

- Soil sampling location - full analysis
- Soil sampling location - field screening

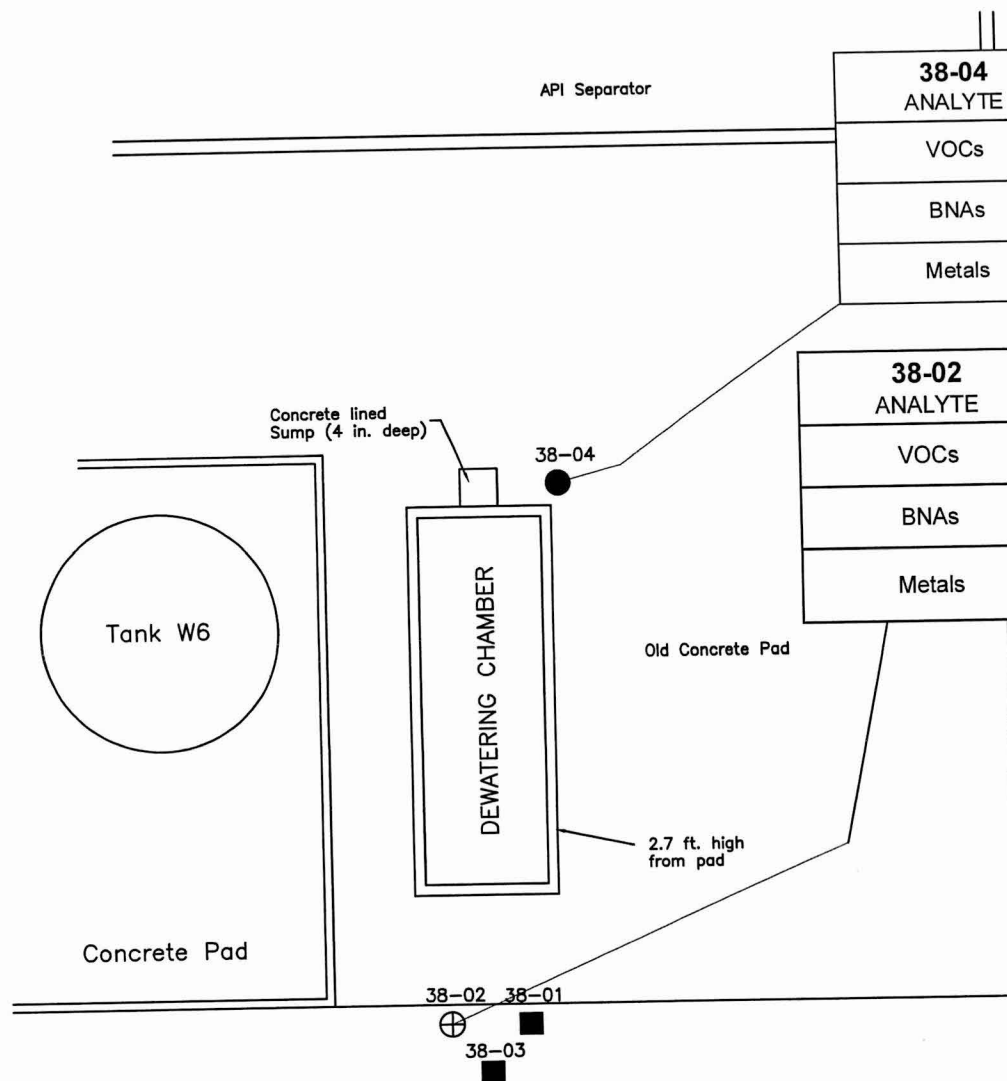
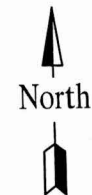


36-04 ANALYTE	1 - 1.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl
VOCs	---	NE	NE	NE
BNAs	NE	---	NE	NE
Metals	NE	---	NE	NE

Scale	Date
1" = 8'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-6
DAF Unit
Soil Sampling Results

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



38-04 ANALYTE	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl
VOCs	NE	NE	NE
BNAs	NE	NE	NE
Metals	NE	NE	NE

38-02 ANALYTE	0 - 0.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	7 - 7.5 ft bgl	9 - 9.5 ft bgl
VOCs	NE	NE	NE	NE	NE
BNAs	NE	NE	NE	NE	NE
Metals	NE	NE	NE	NE	NE

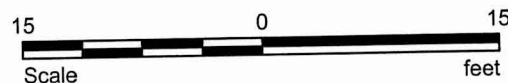
NOTES

NE - no exceedance

LEGEND

- Soil sampling location - full analysis
- Soil sampling location - field screening
- ⊕ Monitoring Well

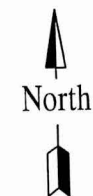
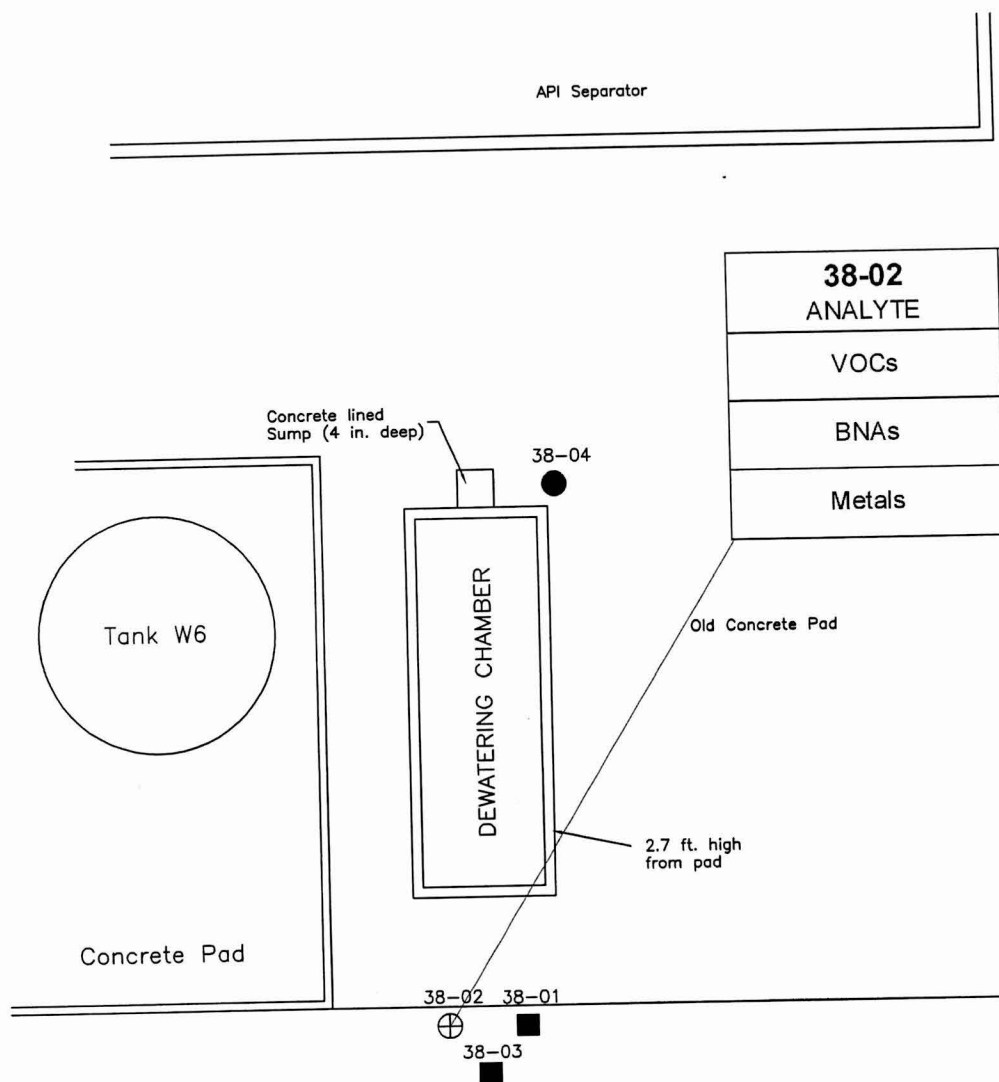
Edge of Road Pavement



Scale	Date
1" = 12'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-7
**Dewatering Chamber
Soil Sampling Results**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



38-02 ANALYTE	Aug-96
VOCs	NE
BNAs	NE
Metals	NE

NOTES

NE - no exceedance

LEGEND

- Soil sampling location - full analysis
- Soil sampling location - field screening
- ⊕ Temporary Monitoring Well

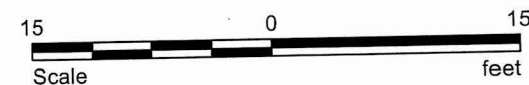
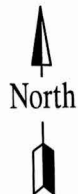


Figure 5-8
Dewatering Chamber
Groundwater Sampling Results

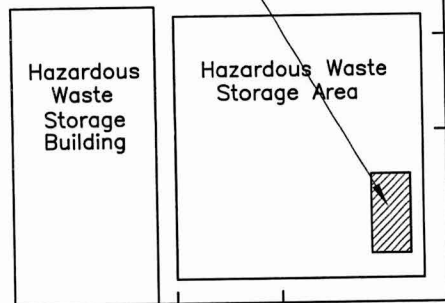
Scale	Date
1" = 12'	Feb 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



HAZARDOUS WASTE MIXING BOX



Fence

Fence

Gate

39-01

39-03

39-02

Gate

Hazardous
Waste
Storage
Building

Hazardous Waste
Storage Area

39-01 ANALYTE	1.0 - 1.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	11 - 11.5 ft bgl	15 - 15.99 ft bgl
VOCs	---	NE	NE	NE	NE
BNAs	NE	---	NE	NE	NE
Arsenic (mg/kg)	NE	NE	1.7 BJ	NE	NE
Metals	NE	NE	NE	NE	NE

39-03 ANALYTE	1.0 - 1.5 ft bgl	1.5 - 2 ft bgl	11 - 11.5 ft bgl
VOCs	---	NE	NE
BNAs	NE	---	NE
Metals	NE	NE	NE

39-02 ANALYTE	11 - 11.5 ft bgl
VOCs	NE
BNAs	NE
Metals	NE

NOTES

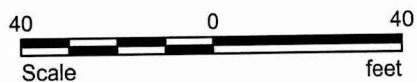
'---' - not sampled

NE - not exceedance

LEGEND

● Supplemental Soil Sampling Location

○ Previous Sampling Location



Scale

1' = 40'

Date

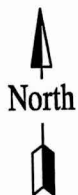
Feb 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 5-9

Hazardous Waste Mixing Box Soil Sampling Results

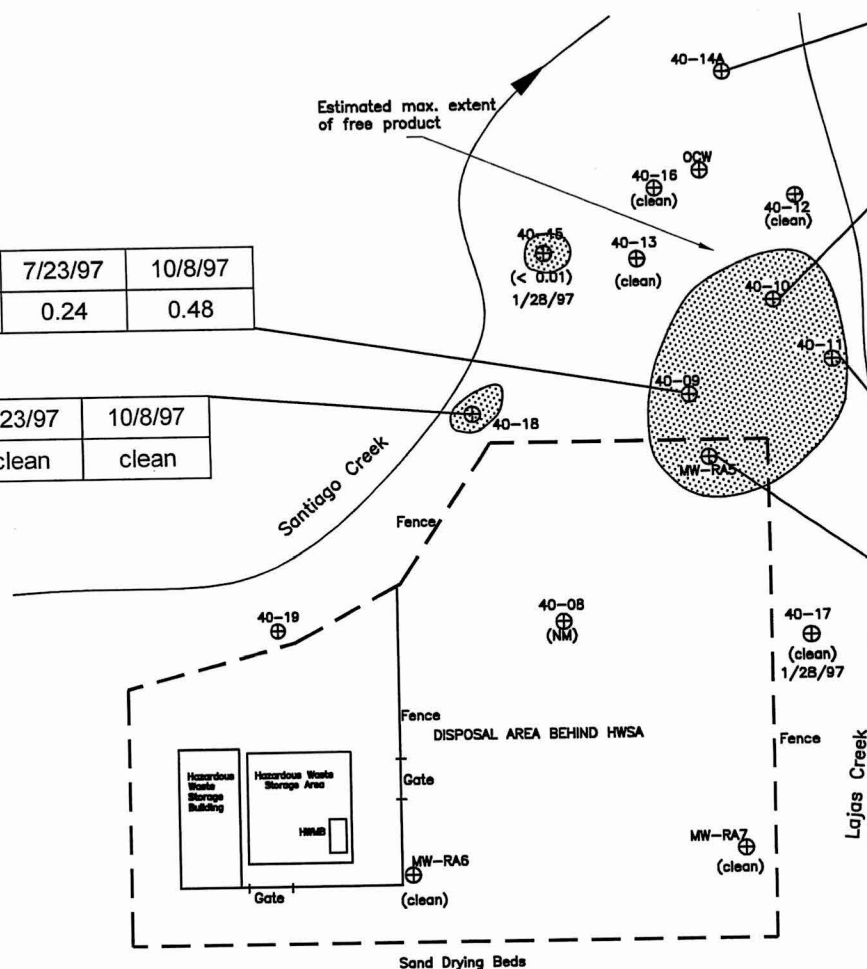
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



1/28/97	4/22/97	7/23/97	10/8/97
1.57	1.29	0.24	0.48

1/28/97	4/22/97	7/23/97	10/8/97
0.02	sheen	clean	clean

Estimated max. extent
of free product



1/28/97	4/22/97	7/23/97	10/8/97
clean	sheen	clean	clean

1/28/97	4/22/97	7/23/97	10/8/97
0.87	1.39	1.24	2.45

40-20
(clean)
1/28/97

1/28/97	4/22/97	7/23/97	10/8/97
<0.01	sheen	clean	clean

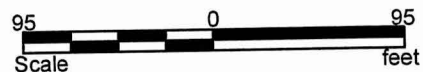
1/28/97	4/22/97	7/23/97	10/8/97
<0.01	sheen	0.02	0.01

LEGEND

⊕ Monitoring Well

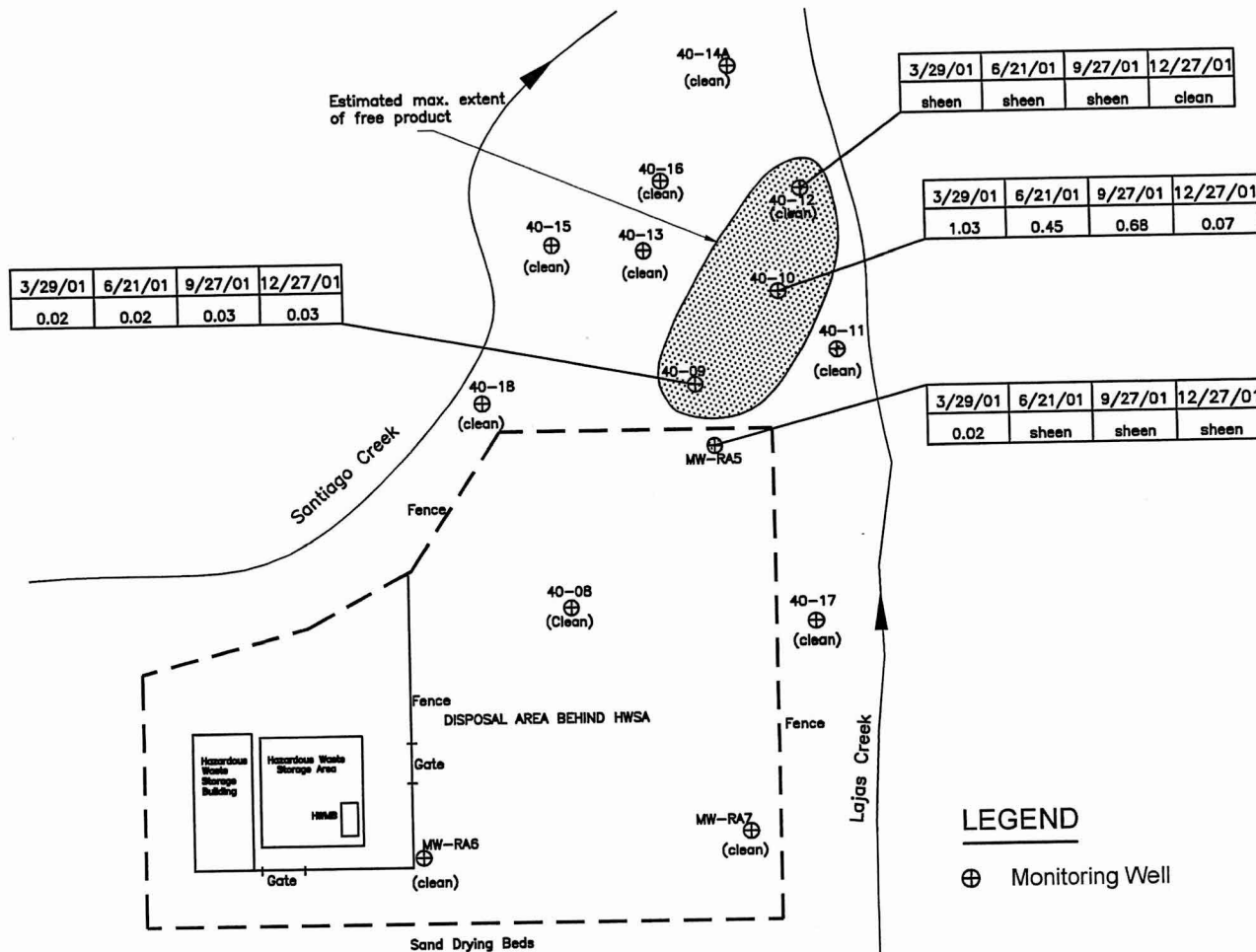
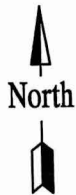
NOTES

- Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells 40-15, 40-17, 40-19, and 40-20 were taken on 1/28/1997. Observations at wells MW-RA6 and MW-RA7 were taken in June and December 1997.
- The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.
- NM - not measured



Scale	Date
1"=95'	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-12A
**SWMU 40 - North East Refinery Area
Apparent Free Product Thickness (1997)
Quarterly Measurements**
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the quarterly measurements are labeled as "clean". A sheen was observed at well 40-11 at other times during the year (see Table 5-54). Observations at wells MW-RA6 and MW-RA7 were taken in December 2001.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.



Scale	Date
1"=95'	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC.	
WHITE PLAINS, NEW YORK	
SAN JUAN, PUERTO RICO	

Figure 5-12B

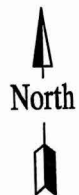
SWMU 40 - North East Refinery Area

Apparent Free Product Thickness (2001)

Quarterly Measurements

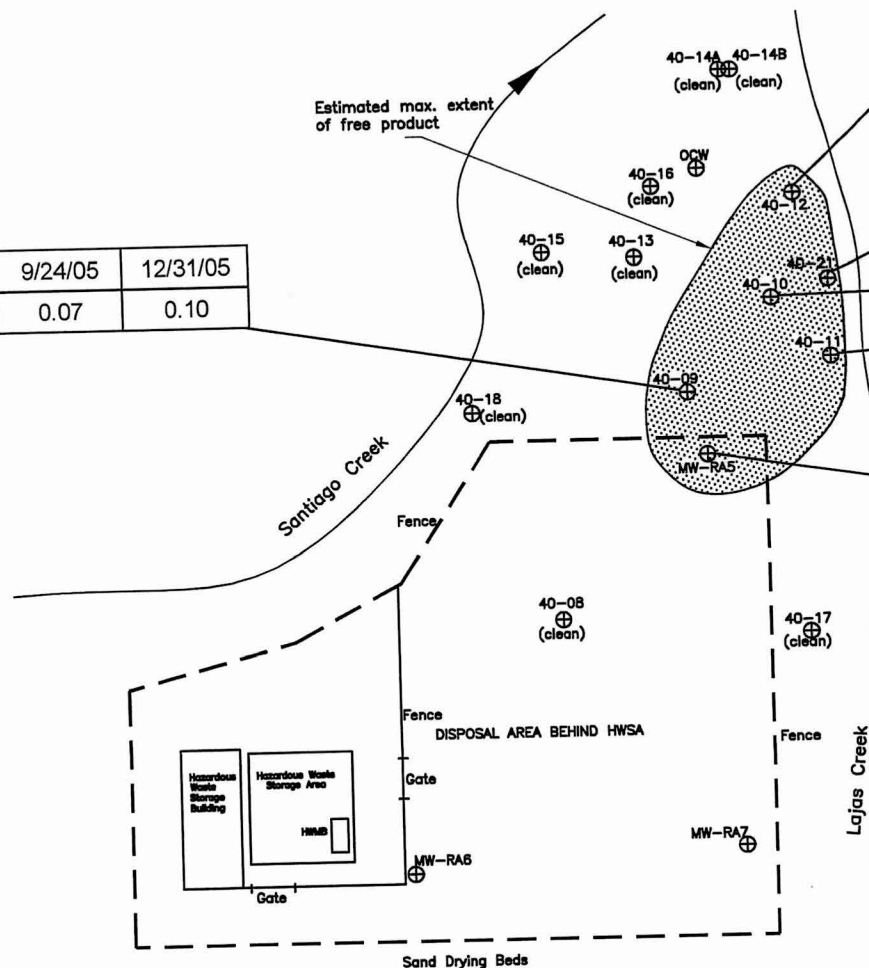
Shell Chemical Yabucoa, Inc.

Yabucoa, Puerto Rico



3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	0.07	0.10

Estimated max. extent
of free product



3/24/05	6/3/05	9/24/05	12/31/05
0.17	0.11	0.18	0.27

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	0.04	0.15

3/24/05	6/3/05	9/24/05	12/31/05
0.20	0.31	0.93	1.73

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

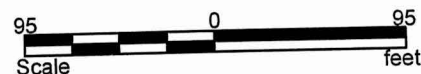
3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

LEGEND

⊕ Monitoring Well

NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".
2. Lajas and Santiago Creeks were inspected on a weekly basis for any product emanating from the unit. No product was observed during the inspections.
3. Well 40-21 was installed in February 2005.
4. The Old Construction Well (OCW) was abandoned in February 2005.



Scale	Date
1"=95'	Feb 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-12C
**SWMU 40 - North East Refinery Area
Apparent Free Product Thickness (2005)
Quarterly Measurements**
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

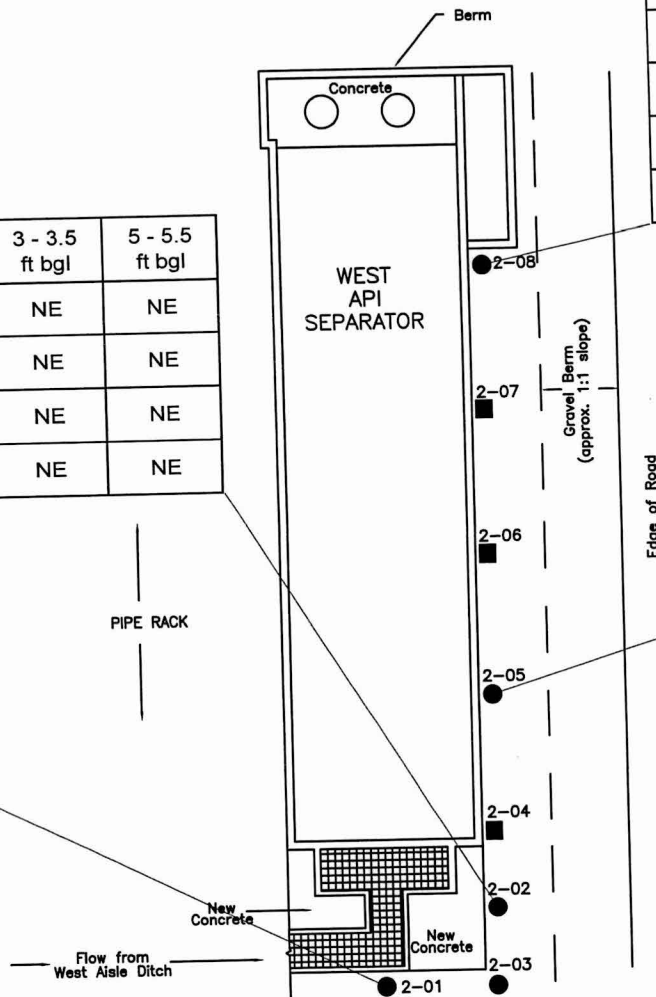


02-02 ANALYTE	0.5 - 1 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl	5 - 5.5 ft bgl
VOCs	---	NE	NE	NE
BNAs	NE	---	NE	NE
Arsenic (mg/kg)	3.3 J	---	NE	NE
Other Metals	NE	---	NE	NE

02-01 ANALYTE	1 - 1.5 ft bgl
VOCs	---
BNAs	NE
Metals	NE

02-08 ANALYTE	2.5 - 3 ft bgl
VOCs	NE
BNAs	NE
Arsenic (mg/kg)	3.2 J
Other Metals	NE

02-05 ANALYTE	1 - 1.5 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl
VOCs	---	NE	NE
BNAs	NE	---	NE
Arsenic (mg/kg)	NE	---	3.5 J
Other Metals	NE	---	NE

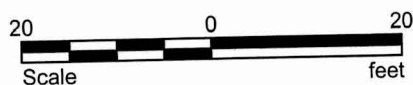


NOTES

'---' - not sampled
NE - no exceedance

LEGEND

- Soil sampling location - full analysis
- Soil sampling location - field screening



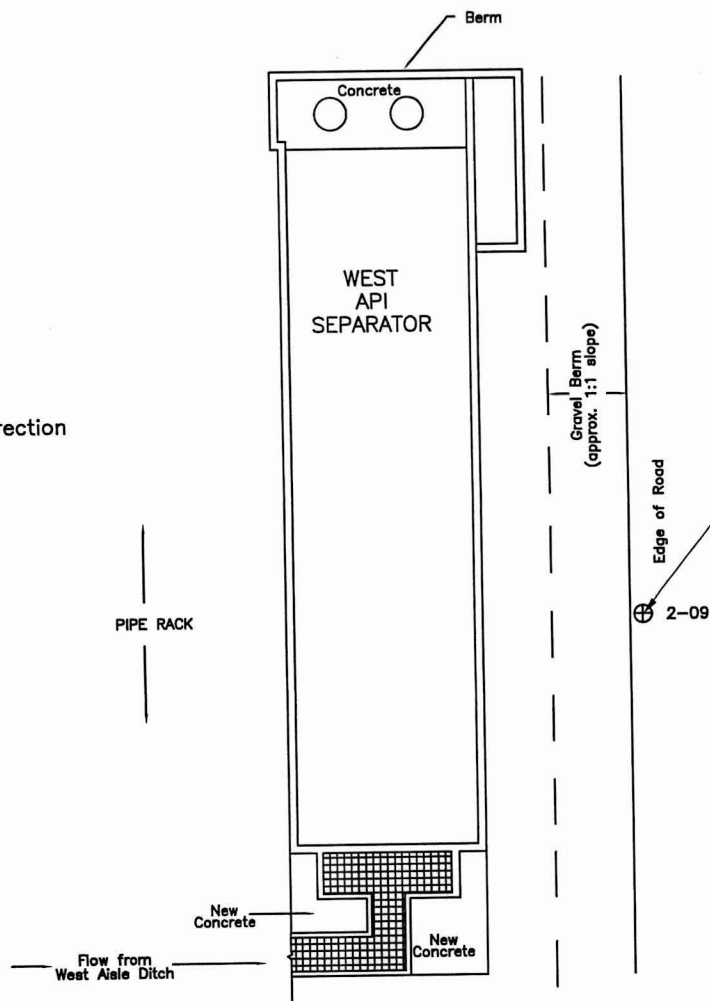
Scale	Date
1" = 20'	Feb 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-13
**West API Separator
Soil Sampling Results**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



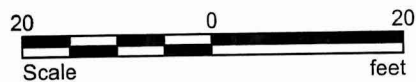
Groundwater Flow Direction



02-09	Apr-03
VOCs	No Exceedance
BNAs	No Exceedance
Metals (diss)	No Exceedance
Metals (total)	No Exceedance

LEGEND

⊕ Monitoring well



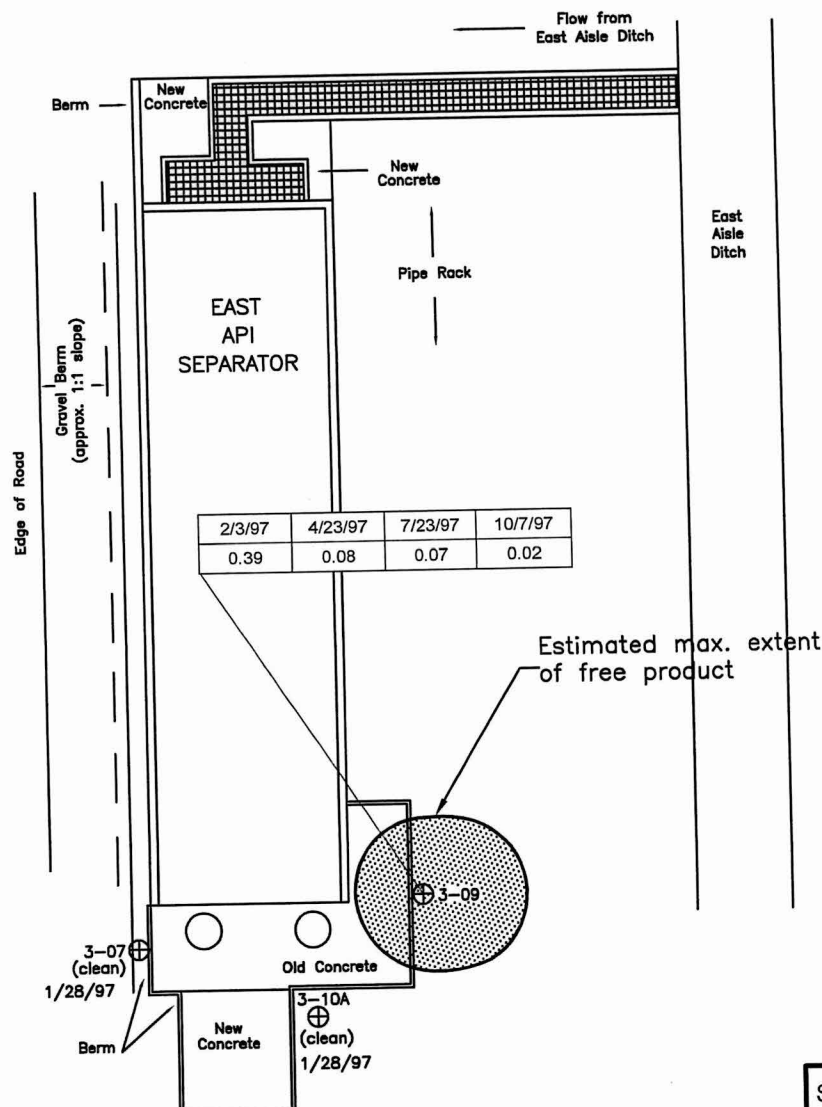
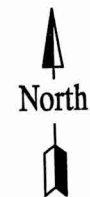
Scale
1" = 20'

Date
March 2005

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 5-14 West API Separator Groundwater Sampling Results

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

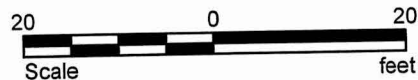


NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells 3-07 and 3-10A were taken on 1/28/1997.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

LEGEND

⊕ Monitoring Well



Scale	Date
1/240	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC.	
WHITE PLAINS, NEW YORK	
SAN JUAN, PUERTO RICO	

Figure 5-17A

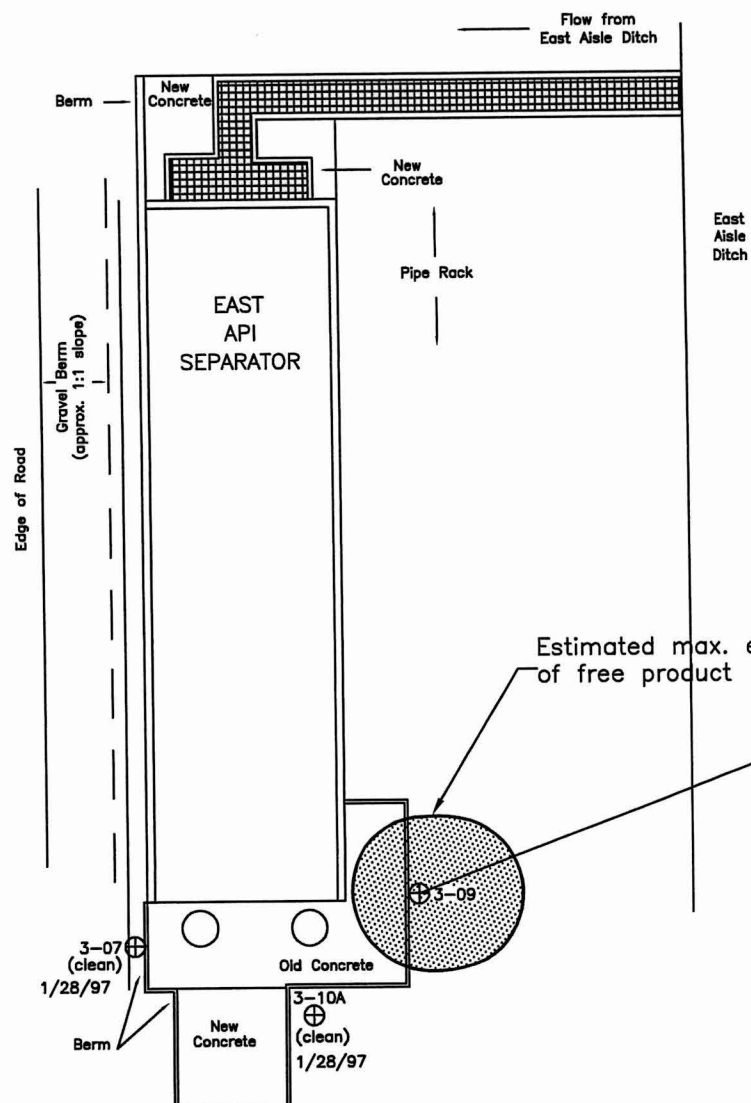
SWMU 3 - East API Separator

Apparent Free Product Thickness (1997)

Quarterly Measurements

Shell Chemical Yabucoa, Inc.

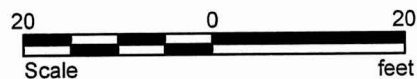
Yabucoa, Puerto Rico



1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells 3-07 and 3-10A were taken on 1/28/1997.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

⊕ Monitoring Well

3/29/01	6/21/01	9/27/01	12/27/01
0.62	0.23	sheen	sheen



Scale	Date
1/240	June 2006

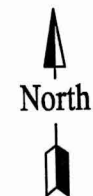
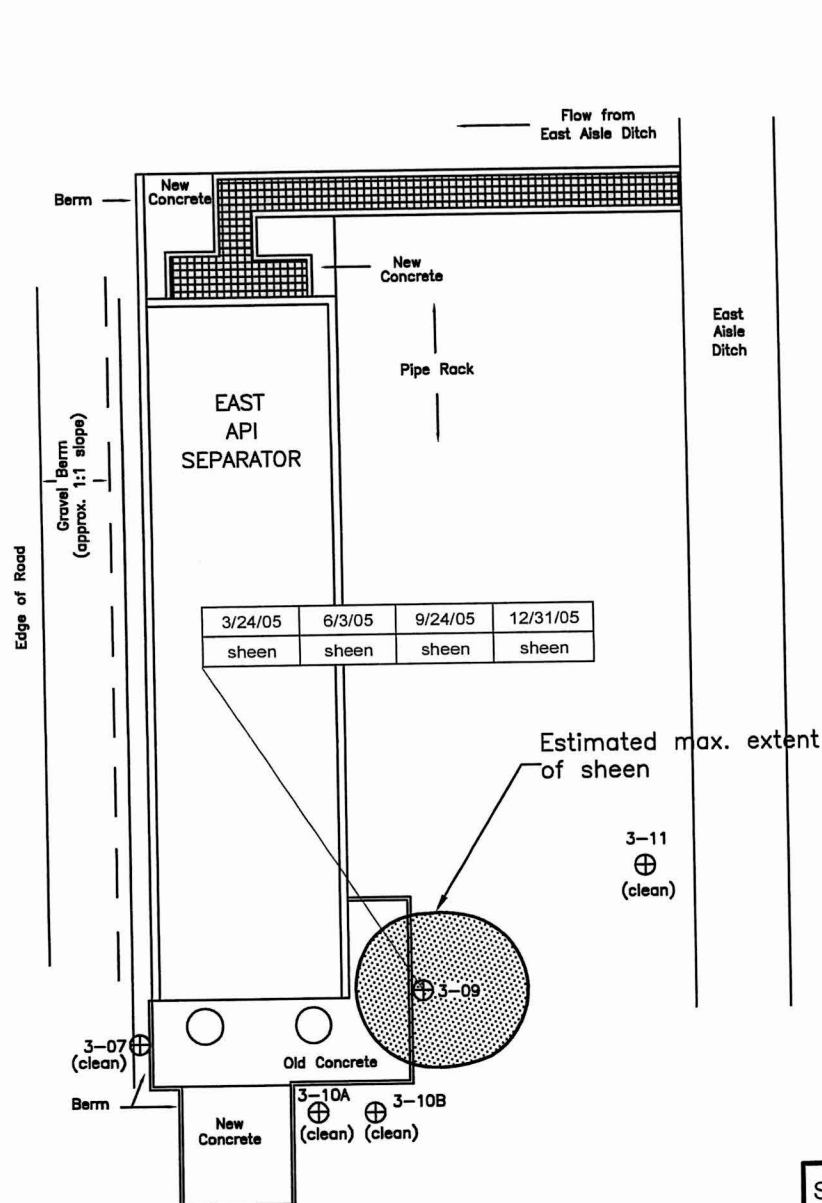
**ANDERSON - MULHOLLAND
& ASSOCIATES, INC.**

WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 5-17B

SWMU 3 - East API Separator
Apparent Free Product Thickness (2001)
Quarterly Measurements

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

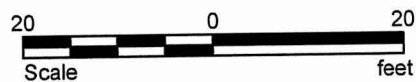


NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".

LEGEND

⊕ Monitoring Well



Scale	Date
1/240	Feb 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-17C

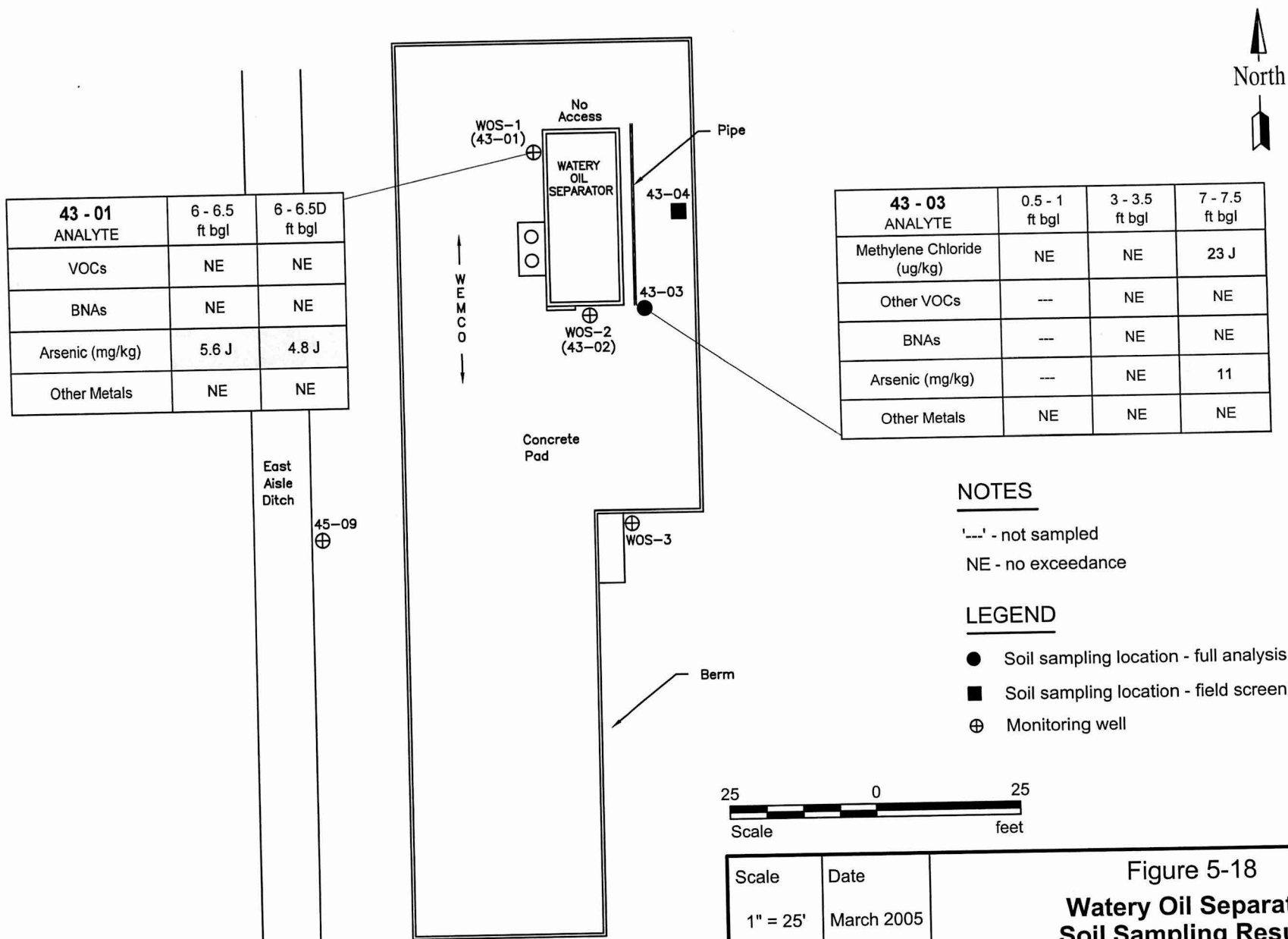
SWMU 3 - East API Separator

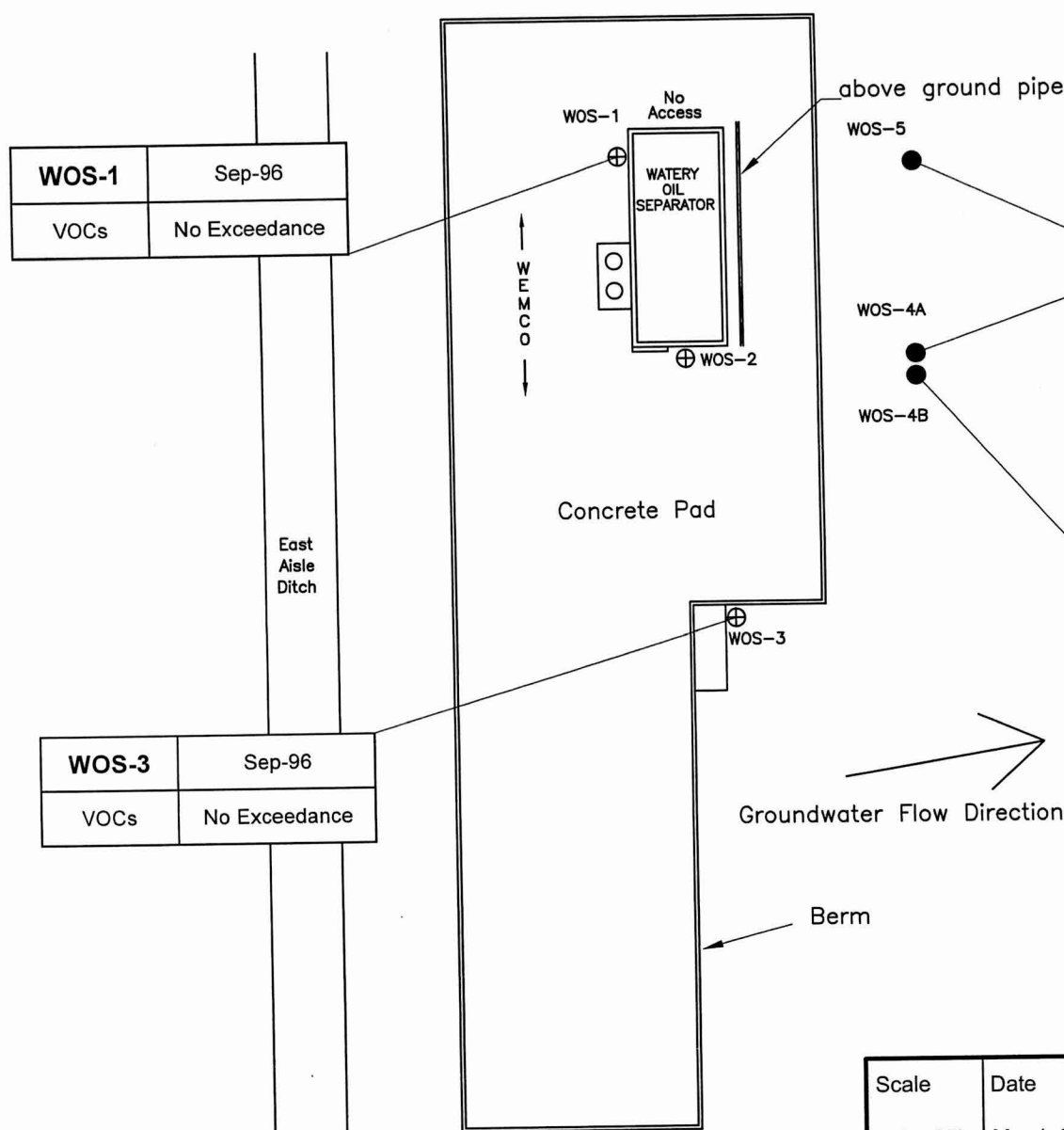
Apparent Free Product Thickness (2005)

Quarterly Measurements

Shell Chemical Yabucoa, Inc.

Yabucoa, Puerto Rico





WOS-1	Sep-96
VOCs	No Exceedance

WOS-5	Apr-03
VOCs	No Exceedance
BNAs	No Exceedance
Metals (diss)	No Exceedance
Metals (total)	No Exceedance

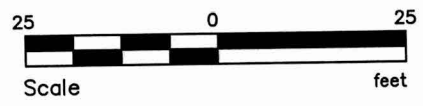
WOS-4A	Apr-03	Apr-03 duplicate
VOCs	No Exceedance	No Exceedance
BNAs	No Exceedance	No Exceedance
Metals (diss)	No Exceedance	No Exceedance
Metals (total)	No Exceedance	No Exceedance

WOS-3	Sep-96
VOCs	No Exceedance

WOS-4B	Apr-03
VOCs	No Exceedance

LEGEND

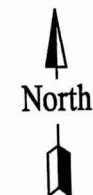
- ⊕ Monitoring Well (1996)
- Monitoring Well (2003)



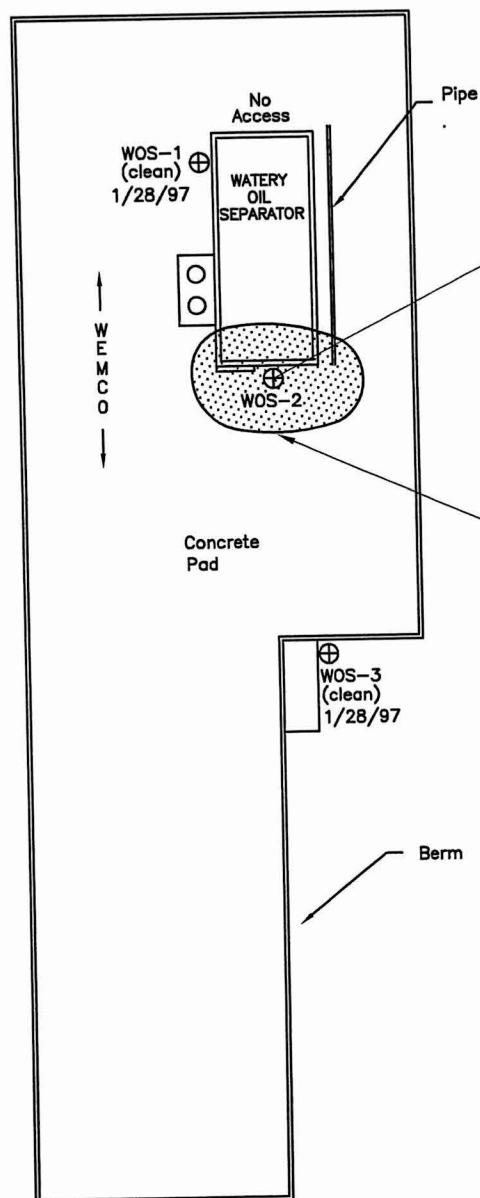
Scale	Date
1" = 25'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-19
**Watery Oil Separator
Groundwater Sampling Results**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



East
Aisle
Ditch



1/28/97	4/23/97	7/23/97	10/7/97
0.23	0.22	0.05	0.90

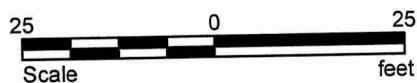
Estimated max. extent
of free product

NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells WOS-1 and WOS-3 were taken on 1/28/1997.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

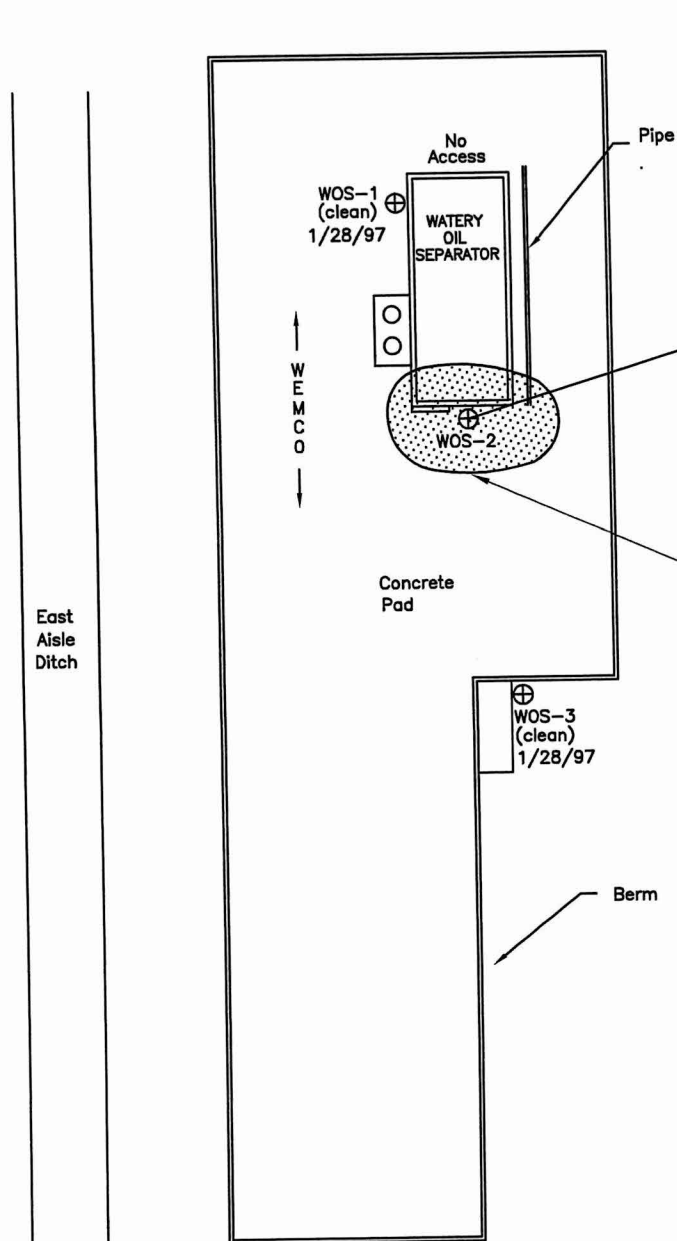
LEGEND

⊕ Monitoring Well



Scale	Date
1/300	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-20A
SWMU 43 - Watery Oil Separator
Apparent Free Product Thickness (1997)
Quarterly Measurements
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



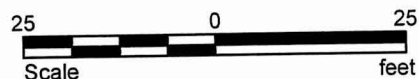
3/29/01	6/21/01	9/27/01	12/27/01
0.10	0.44	0.38	0.54

NOTES

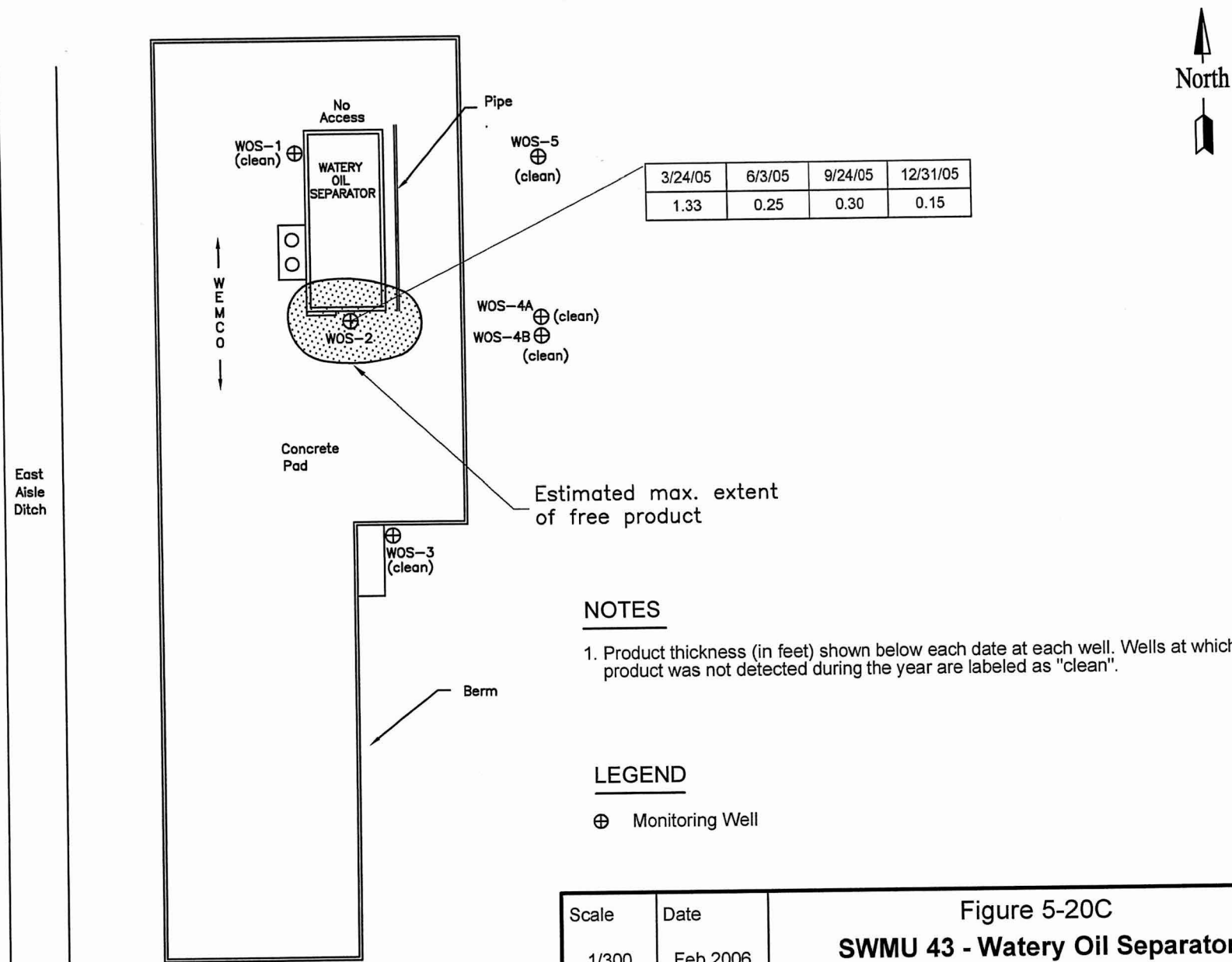
1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells WOS-1 and WOS-3 were taken on 1/28/1997.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

LEGEND

⊕ Monitoring Well



Scale	Date	<div>Figure 5-20B</div> <div>SWMU 43 - Watery Oil Separator</div> <div>Apparent Free Product Thickness (2001)</div> <div>Quarterly Measurements</div> <div>Shell Chemical Yabucoa, Inc.</div> <div>Yabucoa, Puerto Rico</div>
1/300	June 2006	
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO		



NOTES

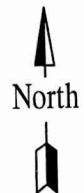
1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".

LEGEND

⊕ Monitoring Well

Scale	Date
1/300	Feb 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-20C
SWMU 43 - Watery Oil Separator
Apparent Free Product Thickness (2005)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico



BALLAST BASIN SKIMMER AREA

Skimmer



East Aisle Ditch

Gravel Berm
(approx. 1:1 slope)

Geomembrane extending beneath basin

Approximate Edge of Water

BALLAST BASIN

Geomembrane extending beneath basin

44 - 01 ANALYTE	0.5 - 1 ft bgl	1.5 - 2 ft bgl	3 - 3.5 ft bgl
VOCs	---	NE	NE
BNAs	NE	---	NE
Metals	NE	---	NE

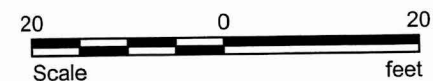
44 - 03 ANALYTE	3 - 3.5 ft bgl	6.5 - 7 ft bgl
VOCs	NE	NE
BNAs	NE	NE
Arsenic (mg/kg)	NE	5.5 J
Metals	NE	---

NOTES

'---' - not sampled
NE - no exceedance

LEGEND

- Soil sampling location - full analysis
- Soil sampling location - field screening
- ⊕ Existing wells



Scale	Date
1" = 20'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-21
**Ballast Basin Skimmer Area
Soil Sampling Results**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

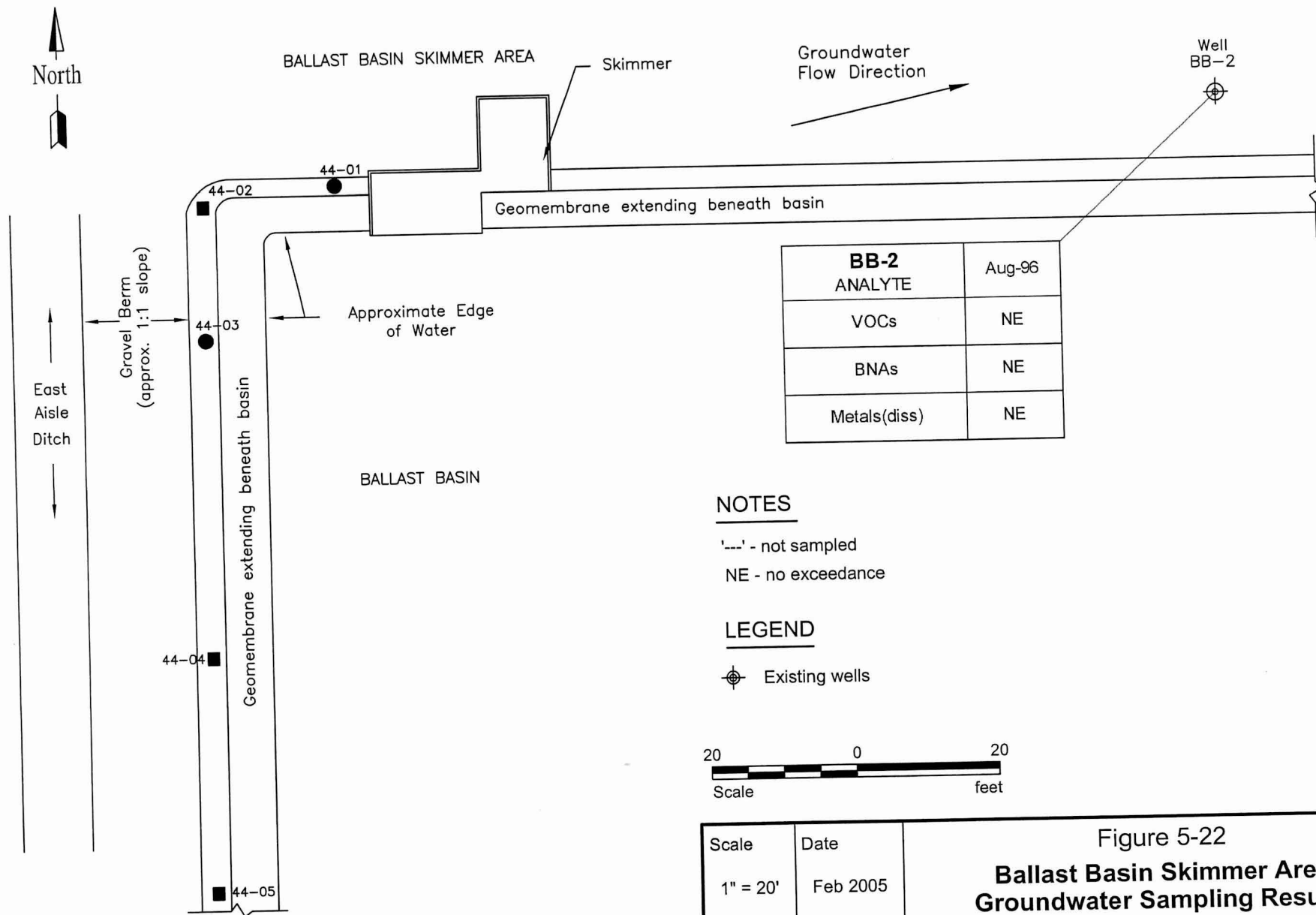
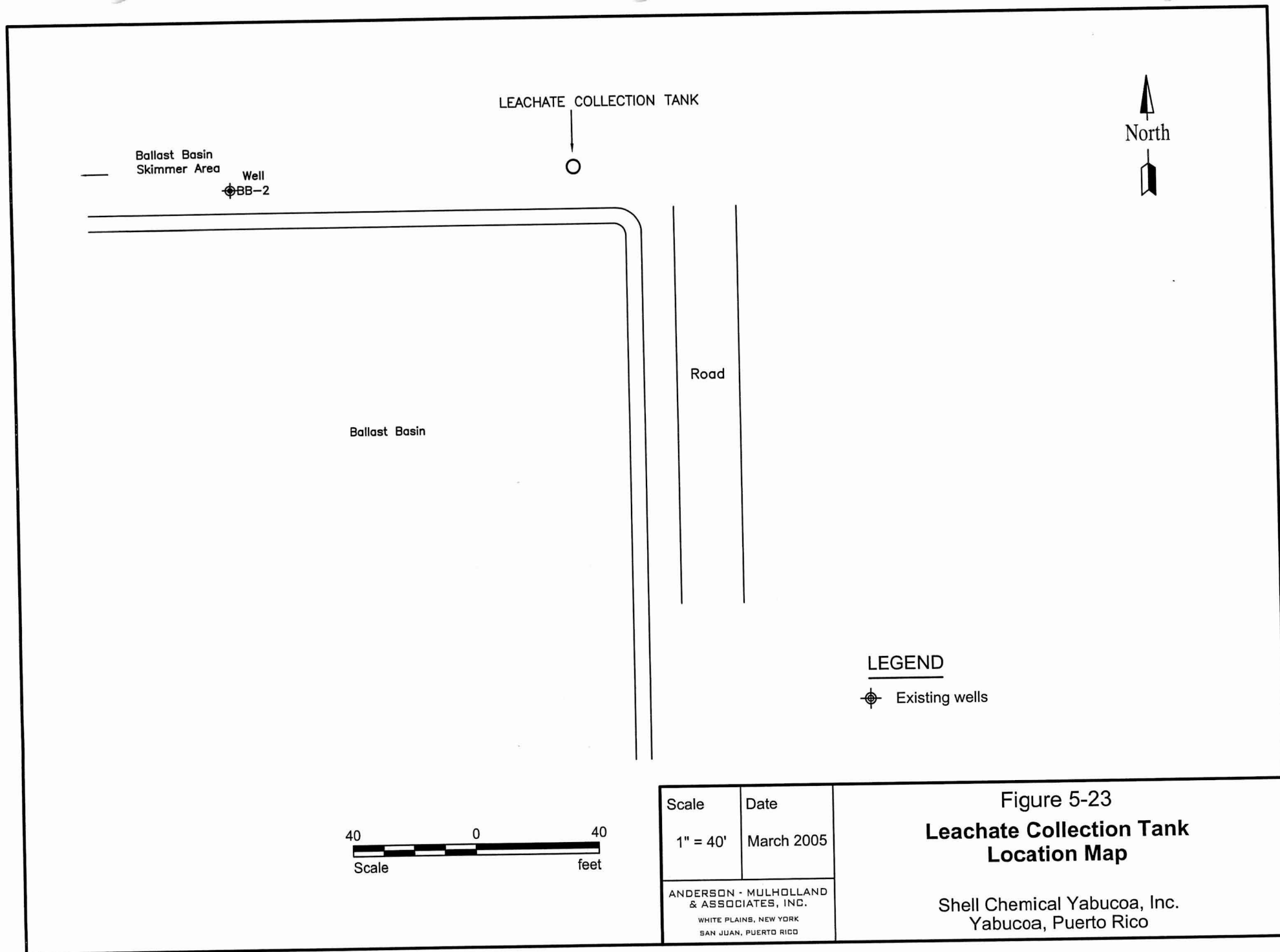


Figure 5-22
**Ballast Basin Skimmer Area
 Groundwater Sampling Results**

Scale	Date
1" = 20'	Feb 2005

ANDERSON - MULHOLLAND
 & ASSOCIATES, INC.
 WHITE PLAINS, NEW YORK
 SAN JUAN, PUERTO RICO

Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

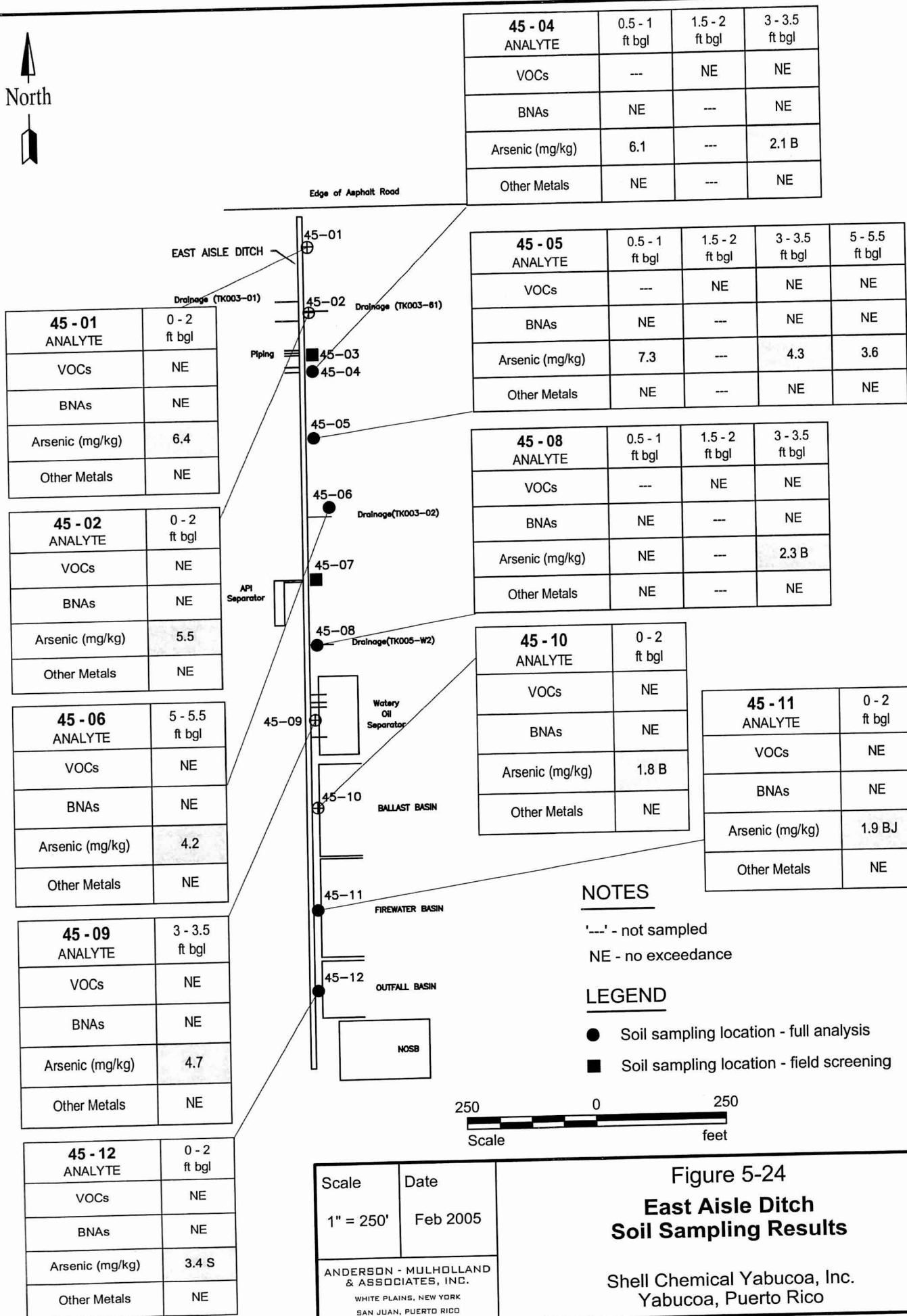


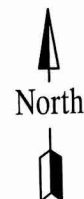
40 0 40
Scale feet

Scale	Date
1" = 40'	March 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-23
**Leachate Collection Tank
Location Map**

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico





45 - 01 ANALYTE	Feb-97
VOCs	NE
BNAs	NE
Metals (diss)	NE

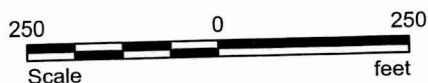
45 - 02 ANALYTE	Feb-97
VOCs	NE
BNAs	NE
Metals (diss)	NE

45 - 09 ANALYTE	Feb-97	Feb-97 duplicate
VOCs	NE	NE
BNAs	NE	NE
Metals (diss)	NE	NE

45 - 10 ANALYTE	Feb-97
VOCs	NE
BNAs	NE
Metals (diss)	NE

NOTES

'---' - not sampled
NE - no exceedance



Scale	Date
1" = 250'	Feb 2005
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-25
East Aisle Ditch
Groundwater Sampling Results

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

EAST AISLE DITCH

Edge of Asphalt Road



EAST AISLE DITCH	45-01	1/28/97	4/23/97	7/23/97	10/7/97
		clean	clean	clean	clean

Drainage (TK003-01)	45-02	Drainage (TK003-01)	1/28/97	4/23/97	7/23/97	10/7/97
			clean	clean	clean	clean

Piping

Drainage(TK003-02)

API Separator

Drainage(TK005-W2)

1/28/97	4/23/97	7/23/97	10/7/97
clean	clean	clean	clean

45-09

Watery Oil Separator

1/28/97	4/23/97	7/23/97	10/7/97
clean	clean	clean	clean

45-10

BALLAST BASIN

FIREWATER BASIN

OUTFALL BASIN

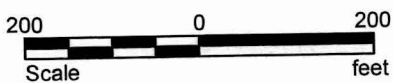
NOSB

NOTE

1. Product thickness are shown below each well. Wells at which product was not detected during the year are labeled as "clean".
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

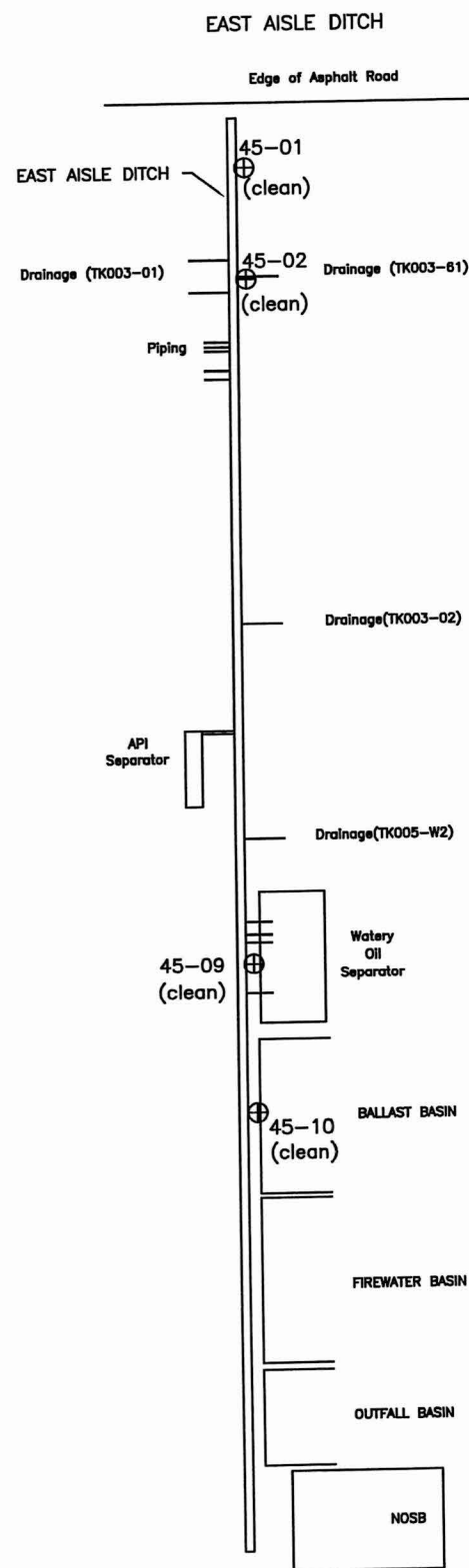
LEGEND

- ⊕ Monitoring Well
- Pipe



Scale	Date
1/220	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-26A
SWMU 45 - East Aisle Ditch
Apparent Free Product Thickness (1997)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

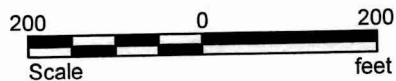


NOTE

1. Product thickness are shown below each well. Wells at which product was not detected during the year are labeled as "clean".
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

LEGEND

- ⊕ Monitoring Well
- Pipe

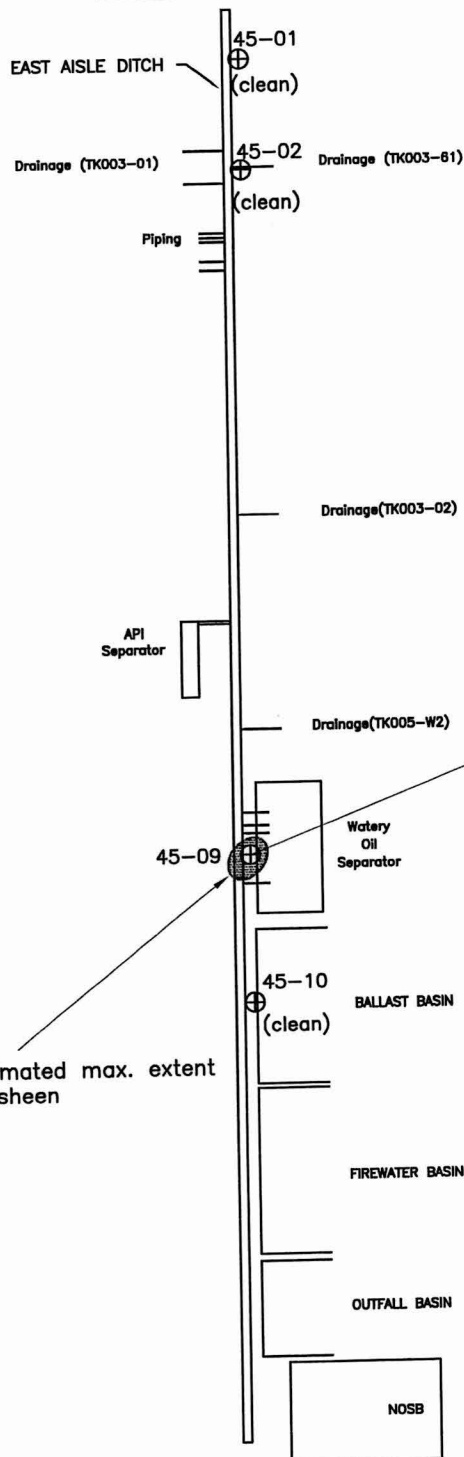
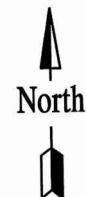


Scale	Date
1/220	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-26B
SWMU 45 - East Aisle Ditch
Apparent Free Product Thickness (2001)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

EAST AISLE DITCH

Edge of Asphalt Road



3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

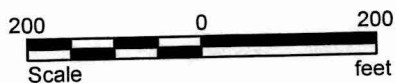
Estimated max. extent of sheen

NOTE

Product thickness are shown below each well. Wells at which product was not detected during the year are labeled as "clean".

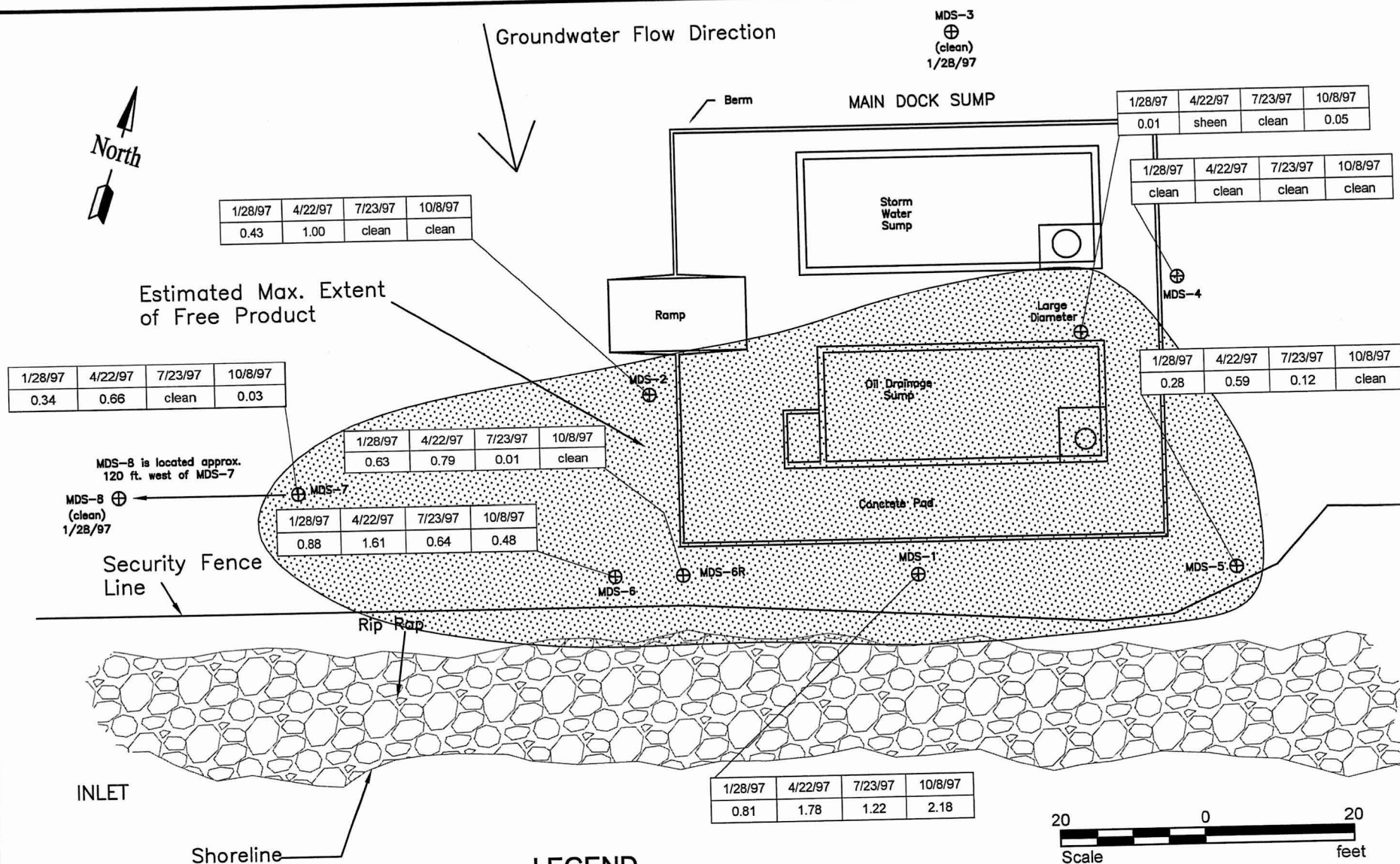
LEGEND

- ⊕ Monitoring Well
- Pipe



Scale	Date
1/220	Feb 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-26C
SWMU 45 - East Aisle Ditch
Apparent Free Product Thickness (2005)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico



NOTES

- Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells MDS-3 and MDS-8 were taken on 1/28/1997.
- The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

LEGEND

⊕ Monitoring Well

Scale	Date
1/240	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-28A
SWMU 33 - Main Dock Sump
Apparent Free Product Thickness (1997)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico



Groundwater Flow Direction

Estimated Max. Extent of Free Product

MDS-8 is located approx. 120 ft. west of MDS-7

MDS-8
(clean)
1/28/97

MDS-7
(clean)

Security Fence Line

3/29/01	6/21/01	9/27/01	12/27/01
0.55	0.20	sheen	sheen

Rip Rap

INLET

Shoreline

LEGEND

⊕ Monitoring Well

NOTES

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean". Observations at wells MDS-3 and MDS-8 were taken on 1/28/1997.
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.

MDS-3
(clean)
1/28/97

MAIN DOCK SUMP

Berm

Ramp

MDS-2
(clean)

Storm Water Sump

Large Diameter

MDS-4
(clean)

Oil Drainage Sump

Concrete Pad

MDS-10R
MDS-6

MDS-6R

MDS-1

MDS-8R

MDS-5

3/29/01	6/21/01	9/27/01	12/27/01
sheen	sheen	sheen	sheen

3/29/01	6/21/01	9/27/01	12/27/01
0.10	0.06	sheen	0.74

3/29/01	6/21/01	9/27/01	12/27/01
sheen	sheen	0.04	sheen

3/29/01	6/21/01	9/27/01	12/27/01
0.29	0.05	0.05	0.65

3/29/01	6/21/01	9/27/01	12/27/01
sheen	sheen	sheen	sheen

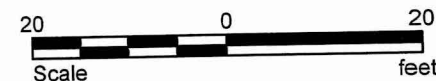


Figure 5-28B

SWMU 33 - Main Dock Sump Apparent Free Product Thickness (2001) Quarterly Measurements

Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

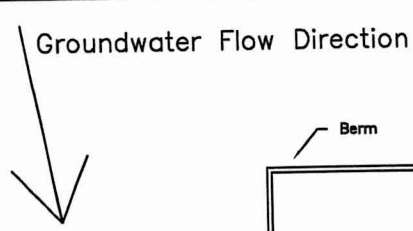
Scale

Date

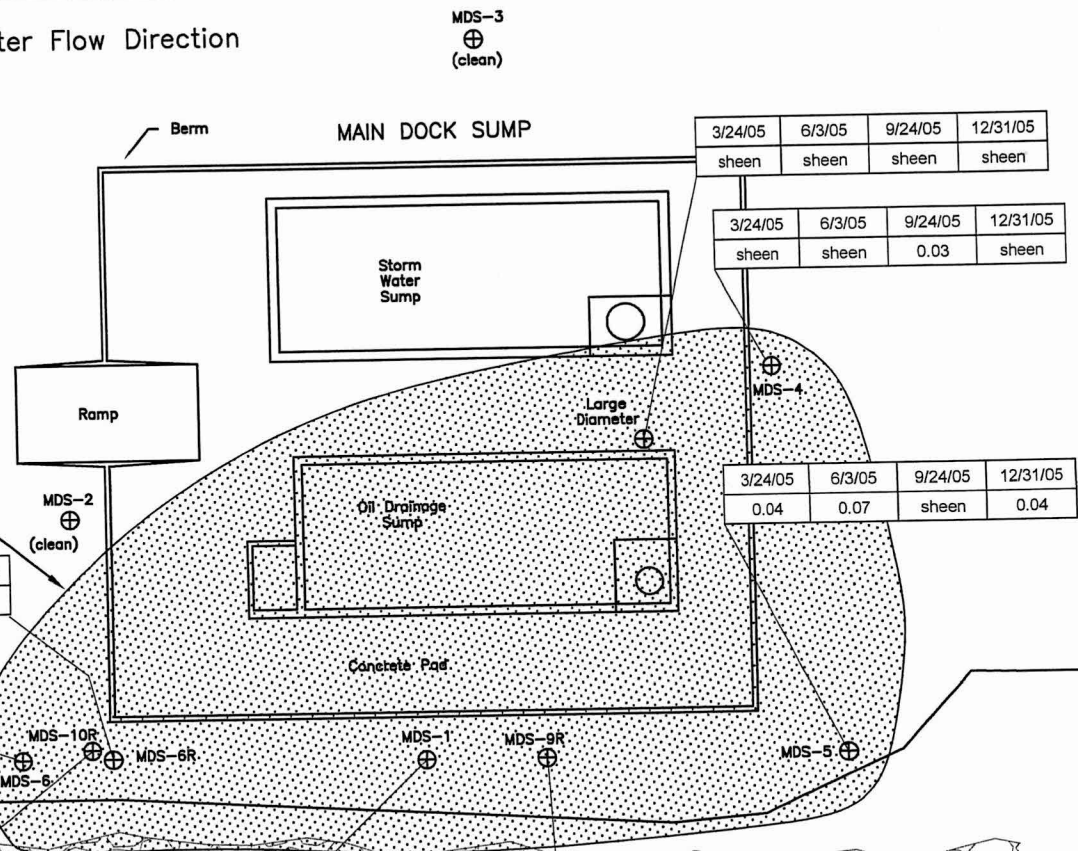
1/240

June 2006

ANDERSON - MULHOLLAND
& ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO



Estimated Extent of Measurable FPH Plume



MDS-8 is located approx. 120 ft. west of MDS-7

MDS-8 (clean) MDS-7 (clean)

Security Fence Line

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

3/24/05	6/3/05	9/24/05	12/31/05
0.20	0.07	0.26	0.09

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	0.03	sheen

3/24/05	6/3/05	9/24/05	12/31/05
0.04	0.07	sheen	0.04

Rip Rap

INLET

Shoreline

3/24/05	6/3/05	9/24/05	12/31/05
0.05	0.07	0.02	0.02

3/24/05	6/3/05	9/24/05	12/31/05
0.04	sheen	0.03	0.04

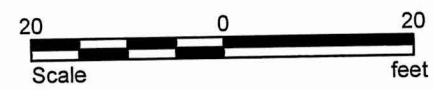
3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen

NOTES

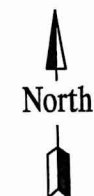
1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".
2. The shoreline at the Main Dock Sump was inspected on a weekly basis for any product emanating from the unit. No product was observed during the inspections.

LEGEND

⊕ Monitoring Well



Scale 1/240	Date Feb 2006	<p>Figure 5-28C</p> <p>SWMU 33 - Main Dock Sump</p> <p>Apparent Free Product Thickness (2005)</p> <p>Quarterly Measurements</p> <p>Shell Chemical Yabucoa, Inc.</p> <p>Yabucoa, Puerto Rico</p>
<p>ANDERSON - MULHOLLAND & ASSOCIATES, INC.</p> <p>WHITE PLAINS, NEW YORK</p> <p>SAN JUAN, PUERTO RICO</p>		



1/28/97	4/23/97	7/23/97	10/7/97
0.48	0.42	0.01	0.08

BDS-4
⊕
(clean)
1/28/97

Pipeline

Estimated max. extent
of sheen

Shoreline

BDS-5
⊕
(clean)
1/28/97

1/28/97	4/23/97	7/23/97	10/7/97
0.02	0.21	0.21	0.11

INLET

MW-1
⊕
(clean)
1/28/97

BDS-2
⊕
(clean)
1/28/97

BDS-6
⊕
(clean)
1/28/97

BDS-1
⊕
(clean)
1/28/97

1/28/97	4/23/97	8/26/97	10/7/97
0.02	0.20	clean	clean

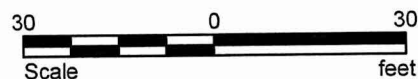
BDS-7
⊕
(clean)
1/28/97

LEGEND

- ⊕ Monitoring Well
- ⊗ Existing Well

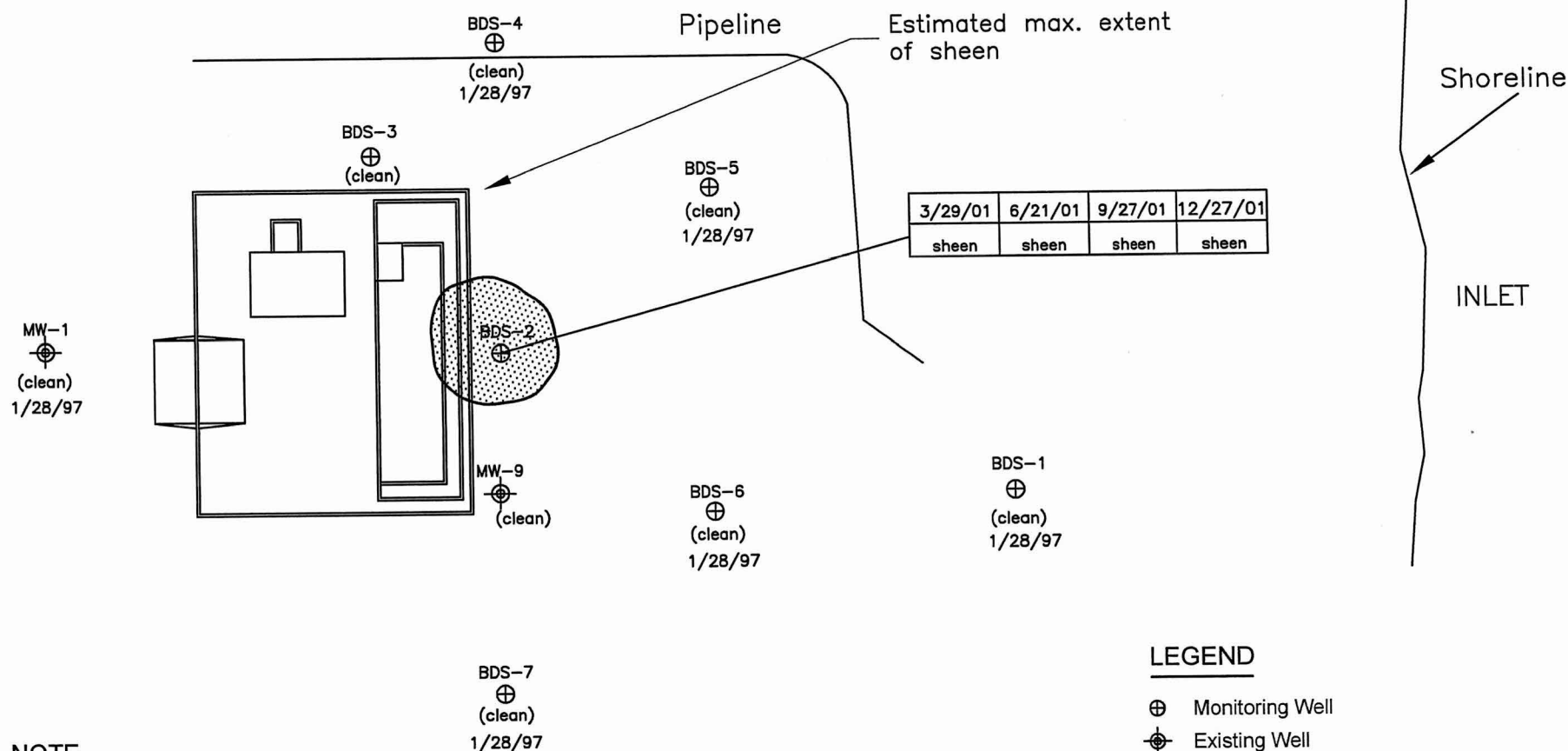
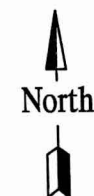
NOTE

1. Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".
2. The facility was owned and operated by Puerto Rico Sun Oil Company during the measurement period.



Scale	Date
1/360	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

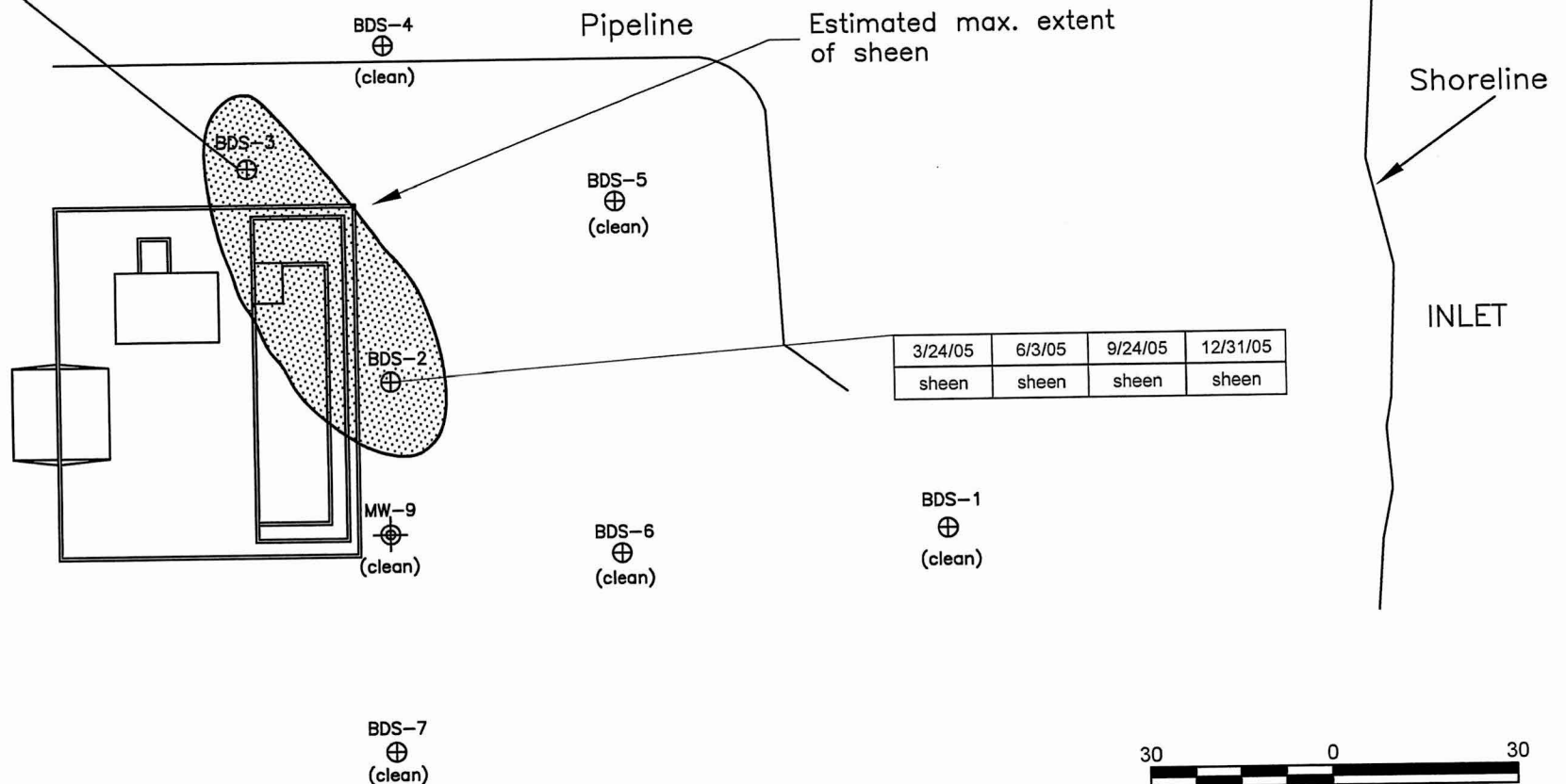
Figure 5-31A
SWMU 34 - Barge Dock Sump
Apparent Free Product Thickness (1997)
Quarterly Measurements
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico



Scale	Date
1/360	June 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-31B
SWMU 34 - Barge Dock Sump
Apparent Free Product Thickness (2001)
Quarterly Measurements
Shell Chemical Yabucoa, Inc.
Yabucoa, Puerto Rico

3/24/05	6/3/05	9/24/05	12/31/05
sheen	sheen	sheen	sheen



NOTE

Product thickness (in feet) shown below each date at each well. Wells at which product was not detected during the year are labeled as "clean".

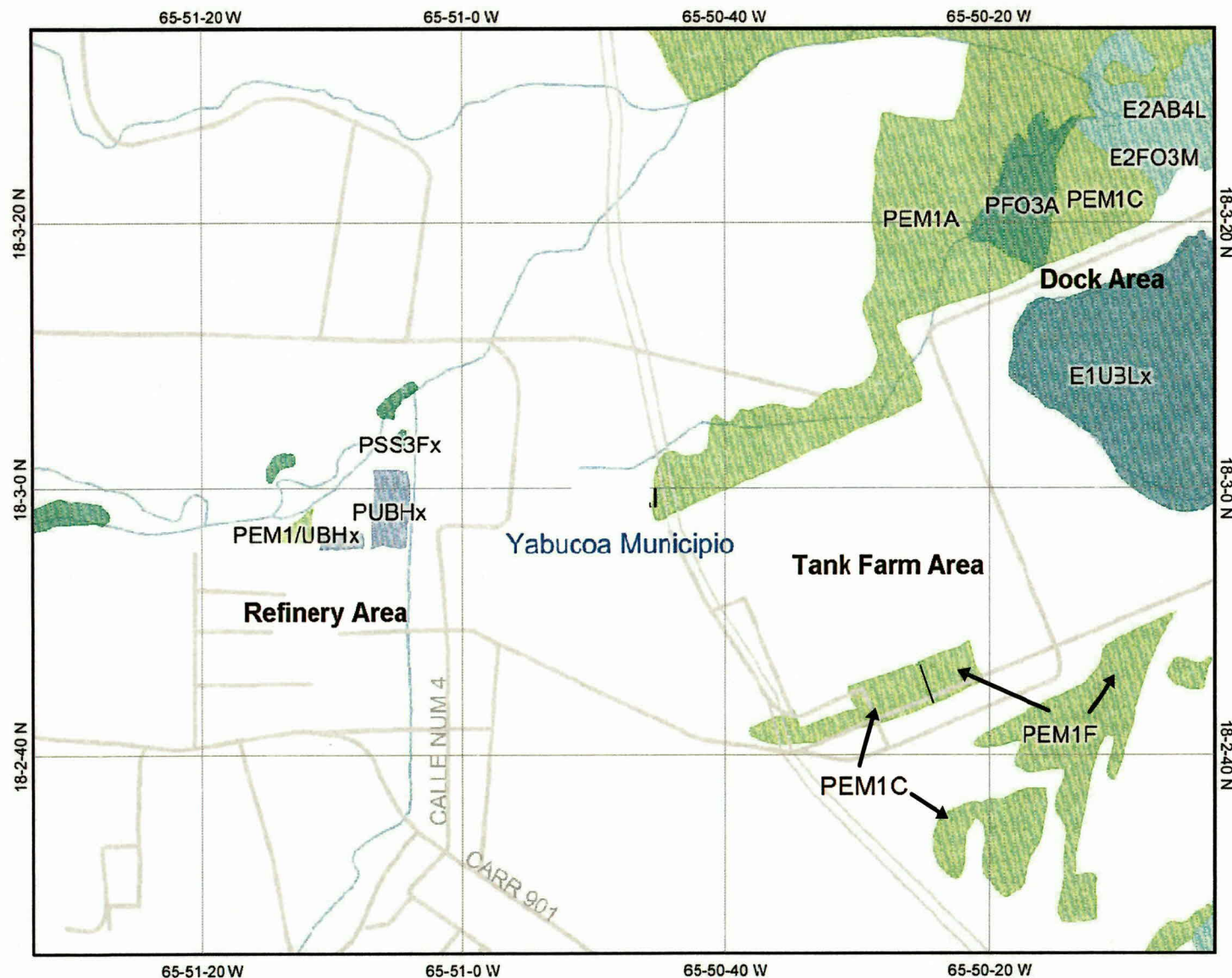
LEGEND

- ⊕ Monitoring Well
- ⊗ Existing Well

Scale	Date
1/360	Feb 2006
ANDERSON - MULHOLLAND & ASSOCIATES, INC. WHITE PLAINS, NEW YORK SAN JUAN, PUERTO RICO	

Figure 5-31C
SWMU 34 - Barge Dock Sump
Apparent Free Product Thickness (2005)
Quarterly Measurements
 Shell Chemical Yabucoa, Inc.
 Yabucoa, Puerto Rico

Figure 7-1, Wetlands Map



Legend

Major Roads

- Other Road
- Interstate
- State highway
- US highway

Roads

- Zip Codes

PRVI Cities

PRVI Wetland Polygons

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

PRVI Available Wetland Data

- Non-Digital
- Digital
- No Data
- Scan
- Waterbodies 2M
- Streams 2M
- PRVI Counties 2M



Scale: 1:20,000

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

(Wetlands base map downloaded from the US Fish & Wildlife Service Wetlands Mapper, Feb 2007)